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ADDRESS.

LICENSE TO PRACTICE.

An Address delivered to the Medico-Chirurgical Faculty of Maryland.

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Mr. President and Gentlemen:—I shall not offer any apology for making the "License to Practice" the subject of my address, as it is one in which all, high and low, rich and poor, lay and professional, are deeply interested. I am fully aware that it is a subject thought to require the delicate handling which we are accustomed to give to topics arousing heated discussion, and upon which diametrically opposite views are held. Still as *the* question agitating the profession today, it requires to be persistently and thoroughly ventilated, and those who have opinions on the subject should speak out in no uncertain tones. I have not had an opportunity of ascertaining the feelings of the members of the ancient and honorable Faculty on the question, one which touches closely I believe, certain vested right of this body; but I have learned that three years ago a Bill for a State Board was rejected, so I presume the matter has often been before you. I am the more emboldened, therefore, to speak freely, knowing full well that I address men who have given time and thought to the problem, who know its difficulties, and who appreciate its importance.

In this country, a man can follow the vocation he pleases, subject only to such restrictions as may be necessary for the public welfare. The right to regulate the practice of medicine rests with the State, and, I believe it is acknowledged that this right comes within that general police power which extends protection to the life and limb of the citizens. At present, this power is very variously exercised in different States. In many, no regulations whatever exist. Any one who wishes, irrespective of qualifications, can practice. In a majority, however, there are restrictions which demand evidence on the part of the practitioner that he has studied, for a longer or a shorter period, at an incorporated school. Practically, the rule prevails that with a diploma from a chartered school, he can begin at once, without any hindrance other than that relating to registration. The educational duties of the State do not here extend beyond the system of common and normal schools, though, in a few, higher university work is also undertaken. Special education does not receive support from the public revenues. Schools of law, medicine, engineering, theology, all the special branches of study are, private enterprises, chartered by the State and maintained by fees from pupils, or by the munificence of private friends. Certain privileges are granted to these Institutions by the State, the most important of which, in the medical school, is the recognition of the diploma as a qualification for practice. So unsatisfactory, however, has this system proved, that there is on the part of the public, and of the profession, a growing sense of the necessity for radical changes as shown by the number of States in which bills have either been already passed, or have been before the legislatures dealing with the problem.

It is universally conceded that the basis of legislation is the necessity of protecting the people against the depredations of ignorant graduates and of quacks. The aim is to divide a minimum standard of qualification to be exacted of all persons who desire to follow the calling of physician and surgeon.

While we find legislatures everywhere willing to support enactments necessary for the safety of the public, they will not, (and it is right that they should not) support class legislation; and herein lies one of the chief difficulties.

If we look around upon those engaged in the practice of medicine, we find that an overwhelming proportion belongs to the regular, or so-called old school. A second small division professes to follow the precepts of Hahnemann; while a third, still smaller, neither one thing nor the other, but a little of both, professes a judicious eclecticism. These three bodies have schools, medical journals, and in each State a more or less complete organization. In the eyes of the law (which rightly disregards medical theories), all are equal. This unhappy division of the body medical is not limited to professional matters, but is complicated with ethical questions of the highest moment. The outcome of it all has been that there are hostile camps and bitter war.

The homœpathists, and the eclectics will, I think, concur in the necessity of a full and proper curriculum of study in the great branches of medicine. Anatomy, physiology, chemistry, histology, embriology, medicine, surgery, obstetrics, gynæcology, and medical jurisprudence know no "isms." The differences only become glaring when we touch the subject of therapeutics, a subject in which among members of each of the so-called schools the greatest individual differences of opinion exist. So strong, however, is the feeling (largely an ethical one), that the divergence of opinion on this one branch separates absolutely the different classes of practitioners from each other; nor do not say that this should not be so, while antiquated dogmas are professed in opposition to a rational and a free science.

We cannot, however, escape from the important fact that in the eyes of the law we all stand equal, and if we wish lesislation for the protection of the public, we have got to ask for it together, not singly. I know that this is gall and wormwood to many; at the bitterness of it the gorge rises; but it is a question which has to be met fairly and squarely. When we think of the nine or ten subjects which we have in common, we may surely, in the interest of the public, bury animosities and agree to differ on the question of therapeutics.

In connection with the licence to practice, there are, it seems to me, three courses open: 1. A continuance in the plan at present, widely prevailing, which makes the college the judge of the fitness of the candidate; and State supervision is only so far exercised that the diplomas are *vised*, and registered, if from legally incorporated schools. 2. The appointment by the State or by parties so deputed of a board of examiners which shall, irrespective of diplomas examine all candidates for the license. 3. The organization of the entire profession in each State into an electorate which shall send representatives to a central parliament, having full control of all questions relating to medical education, examination and registration.

These various places are at present in operation in different parts of the Continent; let us see how they work.

And first of the colleges which have practically had a monopoly for years, as the diploma has carried with it the privilege of registration.

To all intents and purposes the medical schools of the country are private organizations, managed in the interest of the professors, who, with scarcely an exception, have direct pecuniary interests in the size of the classes. The greater number of students and graduates, the larger the fees, and the higher the income of the teachers. The running expenses and the interest on the moneys expended for the teaching-plan are the first call, after which the balance is divided. These chartered corporations, are wholly irresponsible, without supervision by the State, the profession or the public. It would not be difficult, without fear of just rebuke, to bring a railing accusation against them for persistently acting in their own, and not in the interests of the public. But the time has passed for this. Yet, it is surprising to think that so many men, distinguished in every way in their profession, cultured and liberal, still cling to, and even advocate, the advantages of an irresponsibility, which has made the American *system* of medical education a byword among the nations.

Let me not be misunderstood. These very men are, in many instances, those whom we delight to honor, with names which will last as long as American medicine. Yet, to an unbiased mind, there can be no hesitation in affirming that the system which has been permitted to develop in our midst has done, nay, is doing, irreparable wrong. But, it may be urged, on the part of the schools, that they are what the profession wishes. The stream does not rise higher than its source. I do not think that this holds good at present. It does not require a very wide professional acquaintance to gather, that there is now developing, throughout the length and breadth of the land, an earnest desire to support a higher medical education, and this is borne out by the success which has attended the tentative efforts in this direction of the larger schools, which have made a three years' college course compulsory.

Here, let me remind those doctors who talk loudly of medical reform, of the selfishness of schoolmen, of the difficulty in getting colleges to advance, that very much rests with the degree of support given by them to those schools which really make sacrifices for the elevation of the standard. If, for instance, the University of Pennsylvania or Harvard, or the College of Physicians and Surgeons in New York, or the University of Maryland, were to extend to four full years the course of study, there would be at each of these schools, without the slightest doubt, a falling off in income from the reduction in the number of students. So much so, that it would be impossible to run these larger establishments at their present full equipment. Manifestly, it would be suicidal, without the guarantee of outside aid, to imperil corporate interests of such magnitude. But, if on the other hand, those physicians throughout the country, who strongly favor a four years' course as the minimum in which a man can obtain a reasonable knowledge of the science and art of medicine, if these men were to direct their students to such institutions, (and in this matter we all know how much influence the physician has), the problem would be at once solved.

Too often college faculties seem stricken with timidity in the presence of suggestions to lengthen the curriculum and to raise the standard.

Yet, a superficial study of the history of the movement since 1871 and 1872, when Harvard so nobly took the lead, should be convincing to all that even from the lowest considerations the advance should be successful. You have but to look to the condition of the schools which have been in the van, to see that the bread cast upon the waters has already been found. I do not say that these schools are in all instances the most prosperous numerically. Heaven forbid; that is not a standard of merit. But, take the laboratory equipment, the measure in which they fulfill medical requirements, the practical teaching and the development of clinical instruction, and I say without fear of contradiction, that these schools have met with an ample and a just reward. And yet, these are the very schools which clamor loudest for further advance, showing how dangerous it is to arouse the slumbering conscience and to abandon the conviction that a two session course is sufficient for the average American student. But in spite of all that has been done, in spite of the agitation which has been so active during the past ten years, the sad truth must be told that a large percentage of doctors are graduated annually after only two sessions of study.

On paper, the two session schools almost universally demand three years; one of which, it is stated, may be with a physician. Now, it is notorious in these schools that a large majority of the men receive the degree at the end of the second college year, and it is just as notorious that not 5 per cent. of the cases in which a preliminary year of study has been passed with a physician is a *bona-fide* period of medical instruction. It practically amounts to this, that a man enters without any fair preliminary test as to elementary education, say on the first of October of the present year, and eighteen months from date, or rather seventeen months, sometime in March, 1891, he will be let loose upon the commonwealth. Eighteen months in which to master one of the highest, as it certainly is one of the most difficult of the professions which man is called upon to practice! That, gentlemen, these are facts, sad facts, each one of you knows. Yet so blind do men seem in this matter, so wedded to this pernicious system, that I have known physicians in large practice, able, cultivated men, contributors to medical literature, standing high in the esteem of their brethren, permit their sons to follow out the curriculum. Picture if you can the mental condition of such a graduate; an incoherent jumble of theories, a chaotic assortment of what he would call practical tips. But this question has its tragic side, which completely overshadows everything else. It makes one's blood boil to think that there are sent out year by year scores of men called doctors, who have never attended a case of labor, and who are utterly ignorant of the ordinary every day diseases which they may be called upon to treat, men who may never have seen the inside of a hospital ward, and who would not know Scarpa's space from the sole of the foot. Yet, gentlemen, this is the disgraceful condition which some school men have the audacity to ask you to perpetuate; to continue to intrust interests so sacred to hands so unworthy. Is it to be wondered, considering this shocking laxity, that there is a wide-spread distrust in the public of professional education, and that quacks, charlatans and impostors possess the land?

But the handwriting is on the wall, the interpretation has been read, and the prophesy indeed is in course of fulfillment. It needs not the vision of a son of Beor to advertise that within ten years in scarcely a State of the Union will the degree carry with it the privilege of registration; and with this removal of the kingdom from the schools will dawn a new era for the profession in this country. This will happen when unrestricted competition between the colleges, and the total absence of professional and State restraint are things of the past.

Under the second plan the entire question of registration is placed in the hands of examiners, appointed by the Governor or by the State societies. Such a board to be effective must constitute the only portal to practice. The practical working, as shown in North Carolina, Virginia and Minnesota, presents no difficulty, and it constitutes an effective barrier against the inroads of poorly qualified graduates. Within a few years this measure will be widely adopted. It has certain advantages in a simple mechanism, and in clearly defined duties. But the powers are too limited, and there is no control of education preliminary and special, such as comes strictly within the power of the profession in each State.

The record of the Virginia Examining Board for the four years ending October, 1888, is an excellent illustration of the good which may be done. Of 240 candidates examined 54, or 22 per cent., were rejected, a percentage which might be increased considerably if practical examinations were instituted in the practical branches.

Ultimately I believe a more elaborate plan will prevail more difficult to organize, but practical and possessing the great advantage of giving the control of the profession into the hands of the practitioners, and of doing away forever with the minority rule of the college.

Theoretically, there can be no question (particularly in democratic communities) that a State board should be elective, not appointed by the Governor or the societies. An elective board is in reality a medical parliament, which should take cognizance of all matters relating to medical education, and, perhaps, though of this I am not so sure, of questions of public health within the

State. The assembly districts or other territorial divisions which might be made, would send one, or perhaps two, representatives to the board (depending upon the professional population in each district). The electors would be constituted by all practitioners irrespective of schools, which had registered at a certain date. A man who had practiced, even without a diploma, for a certain time would, under these circumstances, have to be recognized and permitted to register.

The Governor of the State would issue the first warrant for the election, which would subsequently be the prerogative of the executive of the board. It might be necessary, at first, to have, from each district, members returned from at least three of the divisions which at present constitute practitioners. The representation should be per capita, the number of constituents in each electorate to be previously arranged. The term of the board should be, at least, four or five years, and members should be eligible for reëlection. Conducted by ballot there should not be the slightest difficulty in carrying out such an election. There would be, of course, active canvassing, and perhaps, many nominated from one district. Though there would be opportunities for political trickery and gerrymandering, I think, on the whole, it would be found that an election could be conducted with tolerable purity. The universities and schools would have full representation on the board. To such an organization, I believe, might be intrusted the control of all matters relating to medical education in the State. It would correspond to the law societies, and to the synods and conferences of the various religious denominations. The powers of such a board would be accurately defined by legislation, and should relate first to preliminary education; secondly, to the examination and registration of candidates for the license to practice; and thirdly, the control of all matters relating to discipline with the profession. The necessary expense would be met—first, by the fees paid by the candidates for examination; secondly, by a small annual tax levied upon all registered practitioners. Such a body could look forward hopefully to a permanent establishment in each State, with buildings suitably equipped for examination, and with every possible provision for conducting, in an orderly and systematic manner, the business of the profession.

The first important function of the board would be the regulation of the minimum standard of education required in entering the profession. It is perfectly legitimate that the profession should say, through its representatives, what should be the qualifications of a candidate who desires to enter upon the study of medicine. In law this holds good; why should it not be so with us. A guarantee of uniformity would thus be given which cannot be expected in the schools. The examiners at the preliminary test should be independent teachers, not professional men, and the examinations could be arranged in different parts of the State. The period of study would date from the passing of this preliminary examination. Such a measure would effectually prevent the entrance of men whose education was such that they could not subsequently grapple with the subjects of professional study.

The examination and registration of candidates would constitute the most important function of the board.

Upon no question will there be a greater diversity of opinion than upon the selection of examiners. The opposition to State Boards on the part of school men is very largely based on the doubt which they have as to the selection of thoroughly equipped men for this work. On the part of the profession such a feeling exists that would prevent the appointment by the board as examiner on his own subject a teacher in any school. The difficulties, however, are not insuperable. With the proper system of numbers for written examinations, and with two examiners at every oral, there could not be the slightest objection, so far as I can see, to the selection of school men as examiners in certain of the branches. In anatomy, chemistry, physiology and pathology, that is to say in all the scientific branches, it would be almost impossible to secure from the general profession examiners with the necessary training. It certainly would be most unjust to well-equipped students from the laboratories of our first-class schools to subject them to examinations on these branches by men who had crammed on purpose from two or three of the most recent text books. On the other hand, in the more practical subjects, there are certainly in each State to be found men fully capable of conducting the necessary test work. I have the honor to know personally, in many States of the Union, men to whom I would intrust with the utmost confidence, the examination of my students in the theory and practice of medicine, and I doubt not that in surgery, midwifery, gynecology, and in the polyglot subject of therapeutics men equally able in these departments would be forthcoming.

There need not be any difficulty in the existing differences between the various schools of practice. All students would be examined in the great primary divisions, anatomy, physiology and chemistry, and so also in pathology and morbid anatomy, in obstretrics and in operative gynecology and in medical jurisprudence.

The examinations in these branches would be uniform. In therapeutics only would there be separate tests for regulars, homeopathists and eclectics. On application, the student would have to indicate for which of the three he wished to apply, and, if successful, would be placed in

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one of the three divisions of the State Register. I am free to confess that this scheme may, to some, seem Utopian, but I am firmly convinced that the majority of those who hear me to-day will live to see State Boards organized on this, or upon a modified plan.

With the third function of the Board, viz, that relating to discipline, I need not detain you further than to say that in any effective act there should be penal clauses giving authority to prosecute irregular and unlicensed practitioners; to remove for cause a name from the register; and to exercise such additional powers as might, in the opinion of the framers of the bill, be thought justifiable.

Now the entire feasibility of such a scheme is illustrated by the professional history of the Province of Ontario. Up to 1865–6 a Licensing Board appointed by the State which dealt, however, in examinations only in the case of candidates without diplomas, but to all intents and purposes it was simply a Board of Registration to which holders of degrees presented themselves, paid a small fee and obtained the license. The schools practically controlled it.

In the session of 1865–6 the profession of the Province sought incorporation, and the Act was framed which, with certain important modifications, at present remains in force. It practically hands over to the profession, through the elected representatives, the management of their own affairs so far as they relate to preliminary and professional examinations and certain disciplinary enactments. In spite of the strenuous opposition on the part of many who felt that it was a most degrading thing thus to lop the important privilege hitherto held by the Universities which enabled graduates to obtain the license without further examination. In spite of dissensions and dissatisfaction, such as are almost inevitable in connection with a new organization, the Board has persisted in its good work and to-day, after 23 years of existence, it has a record of which the entire profession of the Province is most justly proud. On no point was opposition more bitter or more prolonged than on the admission to representation of members of the homeopathic and eclectic bodies. My very first introduction to the profession was a visit with my preceptor to the committee room of the House, in which certain amendments to the Act were being pushed by the colleges. I can recall with vividness the heated dispute with reference to this very question of admission of the homeopathists and eclectics to proportionate representation. It was thought to be a defilement even to come near unto the unclean thing. But wise counsels prevailed, and representation remained general, as it was, though it is true, I believe, that the eclectic body no longer has practitioners enough in the Provinces to send a representative.

The influence which this organization has exerted has been in the highest degree beneficial, and the schools now accept the inevitable with a perfectly good grace. The Board possesses a magnificent central building in which to conduct the examinations, with offices for registration and rooms for a Provincial Library. The fees from the examinations and a small annual tax levied on each registered practitioner has proved a source of ample income. The same condition, with modifications, exists in the other British Provinces.

To those who look upon such a scheme as I speak of as Utopian, and urge difficulties on account of the deeply-seated prejudices and wide dissensions existing between the schools, I might say that the condition here is practically the same in kind, though perhaps greater in degree, to that which existed in the British Provinces prior to 1866. What has been done there so successfully can be equally well accomplished in every State of the Union.

The great gain is, the public guarantee that when a man has received the license to practice, he has, at any rate, the elements of a solid education; that he knows the structure and functions of the human body; and that he is capable of meeting the ordinary emergencies of professional life. Such a plan removes the irresponsibility of the schools, establishes a uniform curriculum of studies in each, and exacts a minimum time for theoretical and practical work.

The difference is simply this, that under our present system independent and irresponsible schools have the upper hand and dictate terms to the profession and to the public, and do whatever they please. With an organized profession, through its representatives in session, the schools take the second place—they exist for the profession and the public. There can be no question as to the great superiority of this method. It is essentially democratic, and should commend itself in every particular to the profession of this country. It is infinitely superior to the second method carried on at present in many of the States, although the Examining Board nominated by the Governor or the societies are better than unrestricted registration. While the interests of corporations are fully represented in this system, they have not the overshadowing power such as was granted in Great Britain by the recent Act in which it seems almost ridiculous to think that only six representatives from the profession at large found a place in a Board, and this number grudgingly granted as a privilege not as a right.

It does not do, however, to underestimate the difficulties which have to be encountered in any attempt to organize these Boards. It may be premature in many States. The profession, I have frequently heard it stated, are not ready for this. This, from my own observation, I should

doubt. I believe the general body of the profession when it fully understands the question cannot but agree that the method is in reality a safe one. I am sure that the public, through the press, will heartily concur in any plan which will guarantee that the practitioners to whom they entrust life and limb shall be educated men.

Opposition will be strongest on the one hand from the schools, which look askance at any measure likely to interfere with their prerogatives, and on the other hand the members of the homeopathic and eclectic fraternity, not unnaturally, dread lest in any such arrangement a full measure of justice should not be meted them.

The antagonism of the schools is not, I believe, serious. To be effectual they would have to be united. It is notorious that many of the Faculties, or perhaps, more truly, many of the prominent members in each Faculty, urgently support State Boards, and a return to the old and normal condition in which a university degree partook somewhat of the nature of an honor, and had no relation to the license to practice. The opposition from the homeopathists and eclectics need not be serious. They profess to seek for better things and to look for a higher standard of examination. If we are truly anxious to deal fairly with them in a matter, not relating so much to our own as to the interests of the public, I am quite sure that we shall find them ready and willing to join hands in such a laudable work. Nor must we talk to them of concessions, but acknowledge plainly their rights, which before the law are the same as our own.

To move surely we must move slowly, but firmly and fearlessly, confident in the justness of our claims on behalf of the profession and of the public, and animated solely with a desire to secure to the humblest citizen of this great country in the day of his tribulation and in the hour of his need, a skill worthy of the enlightened humanity which we profess, and of the noble calling in which we have the honor to serve.

ORIGINAL ARTICLES.

THE BETA-NAPHTHOL *VS.* HYDRO-NAPHTHOL CONTENTION.

Read in the Section of Therapeutics, at the Meeting of the British Medical Association at Glasgow, August, 1888.

BY JOHN V. SHOEMAKER, A.M., M.D.,
OF PHILADELPHIA, PA.

"Who shall decide when doctors disagree?" says the poet, with as close accordance with a general truth as reason and poetry require. Yet we shall always find, even in the case of the disagreement of doctors, criteria by which rational decision may be reached. In the first place, the opinions of individual doctors, as well as of persons not doctors, are not of equal weight, as emanating from men of learning, conversant with the class of subjects under consideration, and qualified to be experimentally satisfied, if question of experiment there be, of the results which they have obtained. In the next place, personal feeling and pecuniary interest may enter into the determination of questions and, giving bias, place the decider of them in a non-judicial attitude of mind. Other things being equal, the fact of the majority, and that a large majority, on one side, is an element enabling an outside investigator to reach, even amidst a mass of conflicting testimony, a verdict by which he can abide. If, in addition to acceptance of the truth of a proposition upon these general principles, we ourselves have personally investigated a subject susceptible of the test of experiment, have faithfully experimented, and have found our results to coincide with all that has been deduced by the majority of unbiased eminent experts, it is impossible for the mind to rest more securely in conviction. And this is the confidence, I confess, in which my mind reposes with reference to the contention regarding the respective merits of beta-naphthol and hydro-naphthol, for the reason that it rests upon the foundations described.

I have for several years used beta-naphthol in my practice, and coincidently have kept myself informed with regard to the investigations of it going on in both Europe and America, growing out of the discussion concerning the relative merits of beta-naphthol and hydro-naphthol.

My first printed contribution to the subject was read on October 17, 1883, before the Philadelphia County Medical Society, and published November 3 of the same year, in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. My second paper was a brief one, published editorially in *The Medical Register*. My third paper was read at the late meeting of the American Medical Association in Cincinnati, and appeared in THE JOURNAL. In the first of these papers, written on the basis of a statement of chemical analysis by Dr. Justus Wolff, I cited many instances of treatment in my own practice with beta-naphthol, both of administration of the drug to myself personally and to patients, adding testimony in its favor from the practice of other physicians; everything pointing to the fact that it is not especially toxic in character.

The gist of my second paper was that, as Dr. Justus Wolff had gone over to the enemy, and as the contention regarding the toxic character of beta-naphthol seemed to be leading in America to little determinate results, the best way to settle the question was, I thought, to subject the action of the drug to a trial from the results of which there could be no evasion.

The third paper entered more fully into the

subject, and made one suggestion as to the cause of the impurity of hydro-naphthol. Curious to relate, it is this hydro-naphthol, which has been shown to be an impure form of beta-naphthol, that is upheld by its advocates to the disparagement of its purer representative. Now arises a question of circumstantial evidence. Who are the chief supporters of hydro-naphthol as against beta-naphthol? Undoubtedly, those persons in New York having a sort of proprietary interest in the manufacture of hydro-naphthol, and to them must be added that class of physicians which obtain their information as to new preparations from hearsay and from advertisements; the class which, having its counterpart in every profession, is that which is readiest to give certificates of excellence. It may moreover be cogently asked, What name but one, prominently associated with chemistry is also associated with the laudation of the quasi-proprietary hydro-naphthol of New York? And lastly, we may well think it strange, that this excepted chemist seemed to ascertain the poisonous character of beta-naphthol simultaneously with his discovery of hydro-naphthol, and yet that would not seem to enter into the chemical constitution of the new discovery. These facts are strange coincidences if they are mere coincidences, and do not point to underlying facts.

For the sake of argument, however, reckon them, if one will, mere coincidences, and let them be acquitted of ulterior significance if they can stand being contrasted with the facts to be mentioned. Some of the most eminent of living chemists, men who cannot by any possibility be shown to be biased in the slightest degree, either as to beta-naphthol as compared with hydro-naphthol, or as to anything else, save as concerning the searching for, finding and promulgation of the truth, emphatically declare, under the signature and seal of their own great reputations, that the vaunting of hydro-naphthol as what it has been affirmed to be by its advocates is erroneous, and as what it has been affirmed to be, in comparison with beta-naphthol, as erroneous again.

If these allegations are correct, decision must be rendered on both counts against hydro-naphthol. Mr. Merck, of Darmstadt; Professor Jacobson, of Berlin; M. Bouchardat, of Paris; the physicians of the Pathological Institute of Giessen, Germany; and Drs. Hoffmann and Endemann, of New York, represent either directly or inferentially the opponents of hydro-naphthol; and have all given the most conclusive reasons for our rejection of it.

It has been shown by them that, barring the impurity of hydro-naphthol, the difference in chemical constitution between it and beta-naphthol is *nil*. In the *Pharmaceutische Rundschau*, of New York, we Americans find, either in the original or republished form, much bearing upon the subject. In Vol. V, No. 4, p. 82 of that journal there is a long article from Mr. Merck, regarding what he describes as the so-called hydro-naphthol. In Vol. V, No. 7, p. 154 of the same journal, there is another article by him. In the first of these he gives us two pages of discussion of the subject, chemical constitution, experiments on animals, etc., concluding with the expression that danger from the application of beta-naphthol instead of hydro-naphthol is out of the question, unless it be to the profits of those interested in hydro-naphthol; that in regard to this danger it is, in the meanwhile, well for the public to know, so that no one, through ignorance of the true state of the case may be deceived by employing the falsely named, impure beta-naphthol instead of the pure ones; and that, the chemical and physiological identity of beta-naphthol with the so-called hydro-naphthol being well known, Seabury & Johnson, whether wittingly or unwittingly, have placed on the market an impure beta-naphthol under another name.

Returning to the charge, in the second article noted, Mr. Merck says flatly: "I have in this affair here said my last word, and confidently trust that thanks are due me for having contributed to the clearing up and settling of the hydro-naphthol swindle." Nothing but an *embarras de richesse* in Mr. Merck's two articles prevents me from drawing at length upon the evidence which he gives in support of his severe conclusion.

In Vol. VI, No. 2, pages 40 and 41 of the *Rundschau*, we Americans also found republished Professor Bouchardat's investigations, which are summed up in the *Pharmaceutical Record* substantially as follows: Beta-naphthol is absolutely safe in any form that it is likely to be administered. Experiments on animals prove conclusively that it would require nearly ½ lb. of it taken internally to produce fatal results in a healthy person weighing 150 lbs. Tested by injected into the veins of animals, as a 1 per cent. solution, the amount determined as requisite to produce death in adult human being of 150 lbs. weight, was 400 grains.

Ten grains in a quart of water will prevent the growth of any organisms. It has five times the antiseptic power of carbolic acid, four times that of creosote, three times that of iodoform, five times that of iodol, four times that of naphthalin, but has only one-twentieth the destructive energy of biniodide of mercury.

Dr. Jacobson is to be found on the same side, equally determined not to lend, even by silence, countenance to a deception of the less educated among the medical fraternity, and through them, of the public. Drs. Hoffman and Endemann, writing in America, are of course best known to such physicians in that country; but if their weight is disputed, that of the other authorities cited can certainly not be impugned. I shall be forgiven, with such authorities as I have on my side, as compared with those on the other side, for

adhering to my convictions as to the merits of beta-naphthol as compared with hydro-naphthol. Contrast the following lucid statement by Mr. Louis Genois, in the *Medical Times* (American), of June 15, 1888, with that which follows it, from the pen of Dr. Justus Wolff in the *International Journal of Surgery and Antiseptics*, of April, 1888.

"Naphthols," says Mr. Genois, "are compounds derived from naphthalin by the substitution of one molecule of hydroxyl (HO) for one atom of hydrogen.

"Naphthalin is regarded as a derivative of benzol, its graphic formula representing it as two benzol rings adhering by one side. The hydrogen atoms of naphthalin are divided into two groups, in one of which they are written with a small h, and in the other with a capital H. Now, derivatives of naphthalin in which the (small) hydrogen atoms are replaced by other elements or radicals are called alpha derivatives, (such are compounds containing chlorine, bromine, nitric acid, etc.), while those in which the (capital H) hydrogen atoms are replaced by other elements or rodicals are called beta derivatives. When, however, naphthalin is treated with sulphuric acid, both varieties are produced, unless very elevated or long-continued heat be applied, in which case only the beta variety results. The usual method of manufacture is as follows: Naphthalin and sulphuric acid are heated together for several hours, the mixture poured into a large quantity of hot water, the excess of the naphthalin filtered off, and the solution saturated with lead carbonate. On evaporation the beta salt crystalizes out first, the alpha salt last. The former is soluble in boiling alcohol, the latter is not; hence they are easily separated.

"From these lead naphthalin sulphonates the respective acids are prepared, and from the acids fused with an alkali, two naphthols are made—the alpha and beta, and these are the only possible naphthols. Dr. Justus Wolff, however, tells us, in his paper, above mentioned, that he has, besides the two well-known alpha and beta naphthols, met with two more naphthols similar to the above ones, but distinct from them in their chemical constitution and some of their properties and reactions. He says the four naphthols, then, are as follows: Alpha-hydro-naphthol, alpha-anhydro-naphthol, commonly called alpha-naphthol, beta-hydro-napthol, named in commerce (that is named by himself), hydronaphthol, beta-anhydro-naphthol, called in commerce beta-naphthol."

Here is a case of disagreement among doctors, with a vengeance. Physicians quote M. Bouchardat against Dr. Justus Wolff, and in this very article Dr. Wolff quotes M. Bourchardat as verifying his results. Mr. Louis Genois informs us that alpha and beta are the only possible naphthols, and Dr. Wolff says he has found four.

How is one to know, in these mysterious days, what is true and what is false in even chemistry? Perhaps there is some capacity in matter, even when not tenanted by mind, to cast its astral and other psychical body in a quite fortuitous manner, never to be resumed, even to the view of one versed in the most occult mysteries of esoteric Buddhism; and perhaps these hydro things may never turn up again, or perhaps they may gradually materialize from the ghost of print.

The situation amounts simply to this, that physicians who vaunt the superiority of the so-called hydro-naphthol over beta-naphthol betray their ignorance of the literature of the subject, of the fact that some of the most distinguished of living chemists have given conclusive evidence of its being an impure form of beta-naphthol, and that no one of equal authority has testified to the contrary, while at the same time there is every reason to believe that the heralding of the so-called hydro-naphthol as a genuine article, superior to every similar product in the market, is purely a commercial speculation.

My own investigations on the subject, necessarily confining themselves to the questions of reaction and physiological effects, and covering many years, have proved conclusively to me that the opponents of beta-naphthol know nothing of the subject except through venders of hydro-naphthol, whose procedure Mr. Merck well characterized in a single word. Supported in my own conclusions by the able investigations that have taken place in Europe, supplemented by those of some of my own countrymen, I am perfectly satisfied to rest the case with its mere statement.

HYDROCELE OF THE HERNIAL SAC.

Read before the Medical Society of the District of Columbia, January 16, 1889.

BY THOMAS M. NORTON, M.D.,
OF WASHINGTON, D. C.

R. H., of this city, male, æt. 6 years, came under my care July 26, 1888, the following history being given by his mother: Several days previous he had fallen from a tree, but hung to a lower limb by his clothes and hands until she could run out and take him down. He complained of pain in his left groin all of the afternoon, lying down most of the time; and on putting him to bed she found a small tumor at the spot where pain was located. But thinking he had simply bruised himself, she felt no uneasiness. The next morning the tumor had disappeared; returning, however, soon after he arose, though giving him no pain. It remained all day, subsiding again during the night. Such conditions continued for several days, when she noticed the tumor was

gradually increasing in size; then for the first time becoming alarmed, called me to see him.

Examination revealed a small direct inguinal hernia, which issued from the external abdominal ring and extended about halfway to the bottom of the scrotum. Impulse on coughing was well marked, and the hernia could be easily reduced by taxis, giving forth on reduction the peculiar hernial "slip" or "flop." The gut passed through the external ring directly backwards into the abdominal cavity, not following the course of the inguinal canal to the internal ring, as it would in an indirect or oblique inguinal hernia.

It is probable the hernia had been forming behind the external ring for some time past, and was merely forced through that opening by the strain to which patient had been recently subjected. I sent him to a truss maker, who fitted him with a truss which perfectly retained the rupture. It inconvenienced him for a day or two until he became accustomed to the pressure, after which it gave him no trouble. He remained under my observation for two weeks, at the end of which time he had resumed all of his former habits, running around and playing with the neighboring children just as he had done before the appearance of the hernia.

About the middle of August he accompanied his mother to Boston, and I heard no more of the case until September 2, when I was again called to see him. His mother informed me that, a few days after arriving in Boston, he had complained one evening of the truss hurting him, but she, thinking it imagination, had made him sleep in it that night. The next morning she found the groin very much inflamed and swollen, being quite painful to the touch, and concluding the truss had slipped out of place, she readjusted it and allowed him to get up, but the pain soon becoming so intense, she was compelled to remove the truss and put him to bed. The inflammation continued for several days, but gradually subsided, leaving, as she thought, the hernia just as it was before, excepting that it did not go in during the night as it had previously done. His bowels were open all of the time, and his appetite was good, his food causing him no inconvenience.

On examination I found a small semi-elastic, irreducible tumor, about the same size and shape and occupying the same location as the hernia. Impulse on coughing was absent, nor was the tumor influenced in any way by straining movements and changes of position on the part of patient.

As there was no history of constipation or interference with the digestive organs, obstructed and strangulated herniæ were excluded, hence the diagnosis lay between hydrocele, varicocele, enlarged inguinal gland, and hæmatocele. For as both testicles were in place, undescended testis was not taken into consideration.

The regularity of the surface of the tumor, its unchangeableness when patient was in recumbent posture, and the absence of the characteristic "cordy" feeling, excluded varicocele. Its position and shape, together with the history of the case, antagonized a diagnosis of enlarged inguinal gland. When examined by artificial light the tumor was translucent, thus differing from hæmatocele, which is opaque under artificial light, as is also an enlarged inguinal gland, therefore the diagnosis of hydrocele was clear. The question then naturally arose as to whether I had mistaken a hydrocele for a hernia in the first instance, but a comparison between the former tumor and the one now present dispelled any such idea.

The first tumor gave a marked impulse on coughing, did not fluctuate on palpation, was reducible and easily retained when reduced, but returning on the removal of the obstruction, and on reduction gave forth the "gurgling" sound which characterizes a hernia; while the second tumor was irreducible, fluctuated when palpated, gave no impulse on coughing, and was translucent udder the "light test."

Dr. Geo. B. Harrison kindly saw the case with me on the following day, and together we diagnosed it "hydrocele of the hernial sac." It differed from hydrocele of the tunica vaginalis or ordinary hydrocele in that this commences, as a rule, at the bottom of the scrotum and progresses upward, gradually filling the entire scrotal cavity, while the hydrocele under observation extended from the external abdominal ring to only about the middle of the scrotum, having a separate and distinct sac around which the scrotum could be freely moved.

Diffuse hydrocele of the cord extending into the scrotal cavity resembles this, but the history of the case contraindicated that affection. Moreover, in hydrocele of the cord, when examined by artificial light, the cord is seen in the tumor, and the contents of the tumor can be pressed back into the inguinal canal, returning again on the removal of the pressure; while in the case of the hydrocele under consideration the cord could be felt behind its sac external to and distinct from it, and could be traced from the testicle up to the external ring, thence into the inguinal canal beneath the neck of the sac, and no force could squeeze the contents of the tumor into the inguinal canal.

In encysted hydrocele of the cord, which is sometimes found in this location, any movement of the testicle or cord is reflected upon the hydrocele itself, and the absence of this peculiarity excluded that affection.

Advised by Dr. Harrison, I evacuated its contents with an aspirating needle, and with strips of adhesive plaster and a thin sheet of rubber placed a light compress over the sac. This was repeated several times, the sac refilling after the

operations. About twelve weeks ago, after drawing off its contents, I washed out the sac with a 2 per cent. solution of carbolic acid, since which time the hydrocele has shown no tendency to return.

The literature on this subject, so far as I have been able to ascertain, is rather brief and unsatisfactory. Drs. McArdle and Kolipinski, after carefully perusing the works of foreign as well as American authors, found recorded but twenty-nine authenticated cases of dropsy of the hernial sac. My own incomplete researches have been far less satisfactory. Wyeth, Ashurst and Erichsen mention the affection as occasionally occurring, and dismiss the subject in a very few words. Gross touches it lightly under the head of hernial hydrocele. Bryant speaks of it as a rare affection, having himself experienced but one case, which occurred in a man of 40, who for two years had been treated for hydrocele of the tunica vaginalis, and where the true diagnosis was only discovered upon post-mortem examination. Agnew, in dealing with the subject, makes the following assertion: "The neck of a hernial sac may become obliterated either from the long continued pressure of a truss, or by a portion of its contents becoming adherent to its mouth. The pouch below, being a serous structure, may become inflamed and dropsical." Accepting this statement as correct, I think the mechanism of the change from a hernia to a hydrocele in the case just reported admits of a plausible explanation.

From the anatomy of the inguinal hernia we would naturally expect to find the most constricted portion of its sac at the external abdominal ring, just as it passes between the tendinous columns which form the lateral boundaries of that opening. At the base of this opening is found the crest of the pubes, presenting a hard bony resistance against the pressure of the truss. Now the delicate tissues of the child, constricted on one side by this bony wall and on the other by the truss, became inflamed. The hypertrophied parts pressing together the sides of the corrugated neck, caused the folds to unite, thus obliterating the sac from the abdominal cavity; and the inflamed lining membrane of the sac becoming dropsical, furnished the contents of the hydrocele.

THE GEOGRAPHICAL DISTRIBUTION OF RICKETS AND CHOREA.—The report of the Collective Investigation Committee shows that rickets, though not unknown in rural regions, is mainly a disease of towns and industrial regions, and especially of large industrial towns. Chorea, like rickets, is mainly a disease of towns and industrial regions, though by no means unknown in rural districts. Its distribution is affected by that of acute and subacute rheumatism, its prevalence diminishing as the latter disease becomes rare.—*Lancet*, Jan. 19, 1889.

SURGICAL CLINICS AT THE WESTERN PENNSYLVANIA HOSPITAL BEFORE THE STUDENTS OF THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

BY PROFESSOR J. B. MURDOCH,

SURGEON TO THE WESTERN PENNSYLVANIA HOSPITAL AND PROFESSOR OF CLINICAL SURGERY IN THE WESTERN PENNSYLVANIA MEDICAL COLLEGE.

[Reported by WILL. N. PRINGLE, M.D., a member of the Graduating Class.]

October 20, 1888.

OPERATION ON A FROST-BITTEN FOOT.

We have here a patient who has had his foot frost-bitten, from which he has lost one toe by amputation, and another one has fallen off, leaving a large and very painful cicatrix. It is not many years since surgeons amputated the leg for injuries involving only the foot. It is not over fifty years since the distinguished French surgeon Velpeau advised amputation at the point of election, as it was called, for such injuries. The point of election was a point about a hand's breadth below the knee. This I suppose was owing to the fact that artificial limbs were not so well known or so much used as they are to-day, and because they only had such artificial limbs as they could use by resting the knee in a flexed position on a wooden one, allowing the stump to protrude behind. But since those days about twenty-seven different amputations have been done between the toes and the ankle-joint, chief among them being those of Hay, Chopart and Syme.

Mr. Hay's amputation is that done between the tarsal and metatarsal bones, while Mr. Chopart's amputation separates the tarsal bones, and hence is sometimes called the medio-tarsal operation. Mr. Symes' operation is done at the ankle-joint. Now all of these are good operations, but the proper operation must be adapted to the proper case; it would not be a right thing to do a Chopart's operation if a Hay's would answer as well, nor would it be proper to do a Symes' if a Chopart's operation would do as well, and if in a given case you can do a better operation than either of them there is no reason why you should follow any of them. They all have their disadvantages as well as advantages. In Chopart's amputation one disadvantage, in the eyes of many surgeons, is that all of the muscles of the anterior part of the leg are severed, thus leaving no antagonist to the action of the gastrocnemius muscle, which, by contracting, raises the heel from the floor, turning the top of the foot down, causing the patient to walk on the cicatrix. I only advise this operation where you can get a long plantar flap and need no dorsal flap. Another objection is that the arches of the foot are destroyed, and consequently the spring and elasticity is gone. Some one has said that if the tread of the foot is lost that the

amputation had better be made at the ankle-joint, because the patient must limp in any case, and that he will be able to do better work by losing the entire foot.

This is not my advice. My rule is always to save as much of the foot as I possibly can. You will find that the mortality will be less in so doing. In the case before you I will follow no particular rule, I will reflect a superior and an inferior flap, and saw the metarsal bones off as near the metatarso-phalangeal articulation as possible. In studying anatomy many students study arteries, muscles and nerves and throw away the remainder, but the man who does not understand the ligaments, nor appreciate the arches of the foot, will never make an orthopedic surgeon. True, he may be able to do some mechanical operations, but he will never understand the causes of malformations or deformities of the foot. As I remove the Esmarch's bandage I am sorry to say that I see little or no bleeding from the wound. It is a good sign to have more or less bleeding from a wound, it shows that there is vitality there, and it is evidence that there will be repair of the wound. In this, as in all other cases where practicable, I use torsion to control hæmorrhage, so that I am certain that I leave no foreign substance in the wound.

Where ligatures must be used catgut is better than silk, as it is an animal substance and is readily absorbed. It is nevertheless foreign matter, and a very prolific source of septicæmia, as it it very hard to render it aseptic and keep it so. In all cases where an Esmarch's bandage has been used there will be more or less oozing from the capillaries, and the limb should be kept elevated for from one to four hours. The oozing will cease much sooner than if it were left in a horizontal posture. A drainage-tube should also always be used, as a collection of blood and serum may create wound tension and interfere materially with repair. In about one week the drainage-tube will have served its purpose and should be removed, otherwise it becomes a foreign substance it the wound, with all that that implies.

November 3, 1888.

OPERATION ON THE ARM FOR A STAB-WOUND MADE THIRTY YEARS AGO.

We have here another case, that of a man 76 years old. He was injured in a fight thirty years ago, by the stab of a knife, the point entering the elbow-joint from behind. Since that time he has suffered almost continual pain, and it is partly to relieve this pain that we do an operation on his arm to-day. You see the joint is partially anchylosed, swollen, and deformed from chronic synovitis. I will use an Esmarch's bandage on this arm.

I do not know what may be required here until I open the joint, but I will begin as though I were going to excise the joint. We make an incision 4 inches long on the posterior aspect of the arm and parallel with it. Two-thirds of the incision will be made over the olecranon process and one-third over the base of the humerus, clear down to the bones. The heads of the bones are then dissected out, care being taken not to injure the ulnar nerve, which lies between the olecranon process and the inner condyle of the humerus. We guard against injuring this nerve by keeping the edge of the knife close to the bone. I will remove the olecranon process with the saw and the diseased cartilage with a scraper. As I do this, however, I meet with a metallic substance, which by the aid of the forceps I withdraw with difficulty, and which, as you see, proves to be the rusty and corroded point of what was at one time an ugly, dangerous-looking bowie-knife. It is fully an inch and a half long and one inch wide at the base. It has lain imbedded in the joint of the old man's arm for thirty years, the source of all the pain he has suffered in that arm.

We cannot in a man at this age expect to secure a very useful arm. This wound will, however, I think, heal kindly, and he will have less pain, to say the least, than he has had in the past, which is a result not to be ignored.

As I explained to you last week the difference between a septic and an aseptic wound, you will at once recognize this as a septic wound, because septic materials are already present in it. As there are deep sinuses and pockets filled with this septic matter, you will appreciate the difficulty in getting rid of them. They are like yeast, if but a small number of these germs remain they will promptly multiply and infect all of the wound again. Notwithstanding this, however, we will use all the antiseptic precautions that we would if the wound were an aseptic one and will hope to get good union of the parts and a speedy closing of the wound by nature. I will also place a drainage-tube in the bottom of the wound and the ordinary antiseptic dressing will be applied, and the patient will be removed to his bed in the ward.

December 15, 1888.

REVIEW OF SOME CASES OPERATED ON.

I want to show you to-day some of the cases on whom we have done operations, in order that you may be able to follow them to their termination. The first is the old gentleman 76 years of age on whom we excised the elbow for a stab-wound received thirty years ago. You will also remember that I removed the point of a dirk-knife from the wound which had lain imbedded there for all these years. The arm, as you see, might not be considered a useful arm, but it is still much better than it was before the operation, and he has no pain, which is an item to be taken into consider-

ation. This is the oldest case of excision of the elbow of which I have any knowedge.

Another case I want to show you is that of the man for whom we excised a knee-joint in the early part of the course, this year. You see he is able to walk around and has a very useful limb. He will leave the hospital in a few days. You see, as I manipulate the limb, that there is perfect anchylosis at the knee, the tibia and femur are practically one bone. You have seen several operations of this kind this winter, and they are operations that I think we should feel proud of, because they are much better than amputation, leaving as they do limbs which are so much better than any artificial appliances.

March 2, 1889.

Before bringing a patient before you this morning, let me read to you a letter from our old friend Thomas Cavanagh, upon whom you saw me do excision of the knee-joint early in this session. I read this letter in order to make the history complete.

DUBOIS, PA., Feb. 26, 1889.

Dear Friend:—With the greatest of pleasure I must let you know that I am walking without crutches or cane. It was on the 5th of February that I walked. I was very much surprised at myself when I done it. From the day that you operated on my knee till the day I walked was 4 months and 8 days. How is that for an old man? Therefore I thank you most respectfully for your skillful operation on me. Doctor I must let you know that I have had no pain in it since I left the hospital, and if I live till the 4th day of July I will go and see you. You can use this letter any way you like.

Therefore I remain yours truly,

THOS. CAVANAGH.

Dr. J. B. Murdoch, Pittsburgh, Pa.

MEDICAL PROGRESS.

PHENACETINE.—Apparently one of the best of the modern antipyretics is a substance described by Hinsberg and Kast as para-acetphenetidin, a substance analogous as regards its chemical constitution to antifebrin. We have already a number of times alluded to the properties of this substance (*Therapeutic Gazette*, 1888, pages 43, 142, 699), and although the testimony as to the action of this preparation as an antipyretic and antineuralgic appears to be unanimous as to its value and freedom from danger, it has attracted no attention among English-speaking members of the profession. This preparation, phenacetine, as first prepared, was a reddish, odorless powder, insoluble in water and in glycerine, and thoroughly soluble in hot alcohol and alkaline liquids. It has been recently prepared in colorless, crystalline needles, which are claimed to be soluble in acetic and lactic acids, and in hot oils. Extended experiments on dogs and rabbits have shown that it is almost inert in doses of from 15 to 30 grains given daily for days at a time. When the dose is increased up to 45 and 75 grains in large dogs it produces accelerated respiration, sleepiness, disturbed coördination, and vomiting, and, in still larger doses, methæmoglobin is produced, as in antifebrin-poisoning. Even after this symptom has appeared, however, recovery has almost invariably occurred. Dr. Hoppe (*Deutsche Medizinal Zeitung*, No. 92) has made a number of experiments on man, administering doses of from 15 to 40 grains, and has found that after a time the system becomes accustomed to the remedy. The only disagreeable effects produced by these amounts were sleepiness, dizziness, nausea, and slight chilliness, the temperature, as consequent on doses of 30 grains, being reduced only a few tenths of a degree Centigrade. It appears, therefore, to be almost free from toxic properties, while his experiments made in the Jewish Hospital in Berlin, have confirmed the result of the experiments as already published by other observers. It has proved absolutely harmless, the only disagreeable after-effect being profuse perspiration, ringing in the ears, followed by weakness, and only in individuals already depressed by disease. As an antipyretic in children, doses of about 2 grains reduce the temperature from 1° to 2° C., a single large dose producing more effect than repeated small doses.

Led by the analogy of phenacetine in composition to antipyrin and antifebrin, Dr. Hoppe has likewise tested the properties of this drug in twenty-five different forms of neuralgia, in the majority of which relief of pain followed its employment. Various cases of headache were also relieved by its use within half an hour to an hour; and he believes that in neuralgia, as in febrile disease, it is equally as efficacious as antipyrin, and is preferable to it on account of its freedom from danger.

Dr. Rumpf (*Berl. Klin. Wochenschr.*, No. 23, 1888) likewise experimented to a considerable extent with phenacetine as an antipyretic and in the treatment of neuralgia. Dr. Rumpf believes that as an antipyretic it is as active as any yet introduced, since he has found that a single dose of 15 grains given to adults may reduce the temperature in the febrile state from two to three degrees in two hours; even half the dose has produced the same effect with no disagreeable complications. In eight cases of hemicrania doses of 15 grains produced great relief, while in seven cases of neuralgia of different nerves it has likewise been very satisfactory. Dr. Rumpf describes phenacetine as a drug which, in doses of 15 grains to adults or 3 grains to children, is an absolutely safe, reliable, and satisfactory antipyretic; while in doses of 15 grains it is highly recommended as an antineuralgic remedy in all cases of vaso-

motor neuroses, in the lancinating pains of tabes and the neuralgias of chronic neuritis.

Drs. Misrachi and Rifat (*Bulletin Gén. de Thérapeutique* June 22, 1888) have confirmed in all respects the statements which we have already published as to the action of this remedy. It is these authors who have determined the solubility of phenacetine in lactic acid. They have found that this solution is not disturbed by the addition of water as long as the temperature does not fall below 33° C. It is evident that this discovery is a great addition to the practical value of this remedy, since its high insolubility has been the principal objection to its use in therapeutics. After the administration of the lactic acid solution it is rapidly absorbed, and has been capable of detection in the urine.—*Therapeutic Gazette*, March 15, 1889.

Bakterioskopy as an Important Criterium for the Diagnosis of Meningitis Cerebro-Spinalis.—Professor Bozzolo, in the Reale Accademia di Medicina in Turin, makes an interesting communication which shows how bacteriological investigation may become an important aid in clinical diagnosis. The case concerned a man 54 years of age, suffering from acute fever with chills, from icterus, pains in the back of the neck, delirium and vomiting; the patellar reflexes were missing, and the spleen and liver were enlarged. The existence of pneumonia was excluded by the lack of the necessary physical symptoms in the lungs. On the ninth day of the disease an explorative puncture of the liver was made; by the cultures made with the extracted blood and by vaccinating mice and rabbits the presence of the diplococcus pneumoniæ was proven. Thereupon the diagnosis "meningitis cerebro-spinalis" was made. Patient died, and the post-mortem confirmed completely the diagnosis. Besides a diffuse meningitis there was endocarditis of the aortic-valves and abscesses of the liver in consequence of biliary calculi. Bozzolo emphasizes the importance of bacteriological investigation of the blood in doubtful diagnosis, and mentions a very simple method of investigation invented by his clinical assistant Dr. Belfanti, which makes it possible to recognize to a certainty, the presence of the diplococcus in the blood of patients. It consists in the following: By tapping a vein, a small quantity of blood is taken from the patient, transferred to a thermostat, heated to 37°, and left in it for ten or twelve hours. If the diplococcus existed in the blood, numerous colonies of this microörganism will be seen developing on the coagulum.—*Internationale Klinische Rundschau*, 1889, No. 13.

Two Cases of Fracture of the Spine Treated by Trephining.—Mr. Herbert Allingham at a meeting of the Medical Society of London, read notes of two cases treated at the Great Northern Hospital last year. J. A., æt. 31, was admitted in July, having fallen 40 feet, causing a fracture of the spine. He was paralyzed from below the level of the ensiform cartilage. As he did not improve, in fact, seemed to lose ground, Mr. Allingham trephined the spine through an incision ten inches long. It was seen that the lamina of the sixth vertebra was badly fractured and depressed. He therefore with the bone forceps snipped off the laminæ and spinous processes of the fifth, sixth, and seventh vertebræ, exposing the cord for about four inches. The operation took an hour and a half, and the wound was dressed antiseptically. Healing had taken place in about ten days, and the symptoms of ascending changes checked. Some amount of improvement subsequently took place, the level of the paralysis being brought down to the umbilicus. Case 2 was brought to the hospital in August, on account of a fall. She was paralyzed from a level seven inches above the umbilicus. Six days later Mr. Allingham removed the spinous processes and laminæ of the third, fourth, fifth and sixth vertebræ, and as the cord was found to be crushed the dura mater was opened. The wound healed up except in the track of the drainage-tube in about a fortnight. The patient, a woman, died seven months later from bedsore, cystitis, etc. The cord was found to be almost divided, both ends tapering down to a fine point. Mr. Allingham concluded (1) that by timely trephining inflammatory ascending changes were prevented; (2) that no bad symptoms followed the laying open of the spinal dura mater; (3) the operation, although tedious, was not difficult, and did not lessen the chance of recovery. Dr. Mackenzie said the fact had recently been established that the spinal column could be opened and examined without much danger, and, where nothing was discovered, the injury inflicted was capable of rectification and the patient was given the best chance of recovery. That was of far more importance than the success of the first two or three operations, since it established the principles upon which future progress could be accomplished. He suggested that Dr. Beevor might be able to elucidate the changes that had taken place in the cord, which were relieved by the operation. Dr. Routh mentioned two cases in which effusion into the spinal canal had been diagnosed, and in which death had taken place because no one was prepared to undertake to tap the canal. Dr. Beevor alluded to the difficulties that arose in consequence of the fact that the anæsthesia began much lower down than the seat of injury would lead one to suppose. The same difficulties had been met with when Mr. Horsley operated for the removal of a supposed spinal tumor. He said that the question as to the points in the cord at which the sensory fibres

were given off required elucidation. He mentioned a case in which it was clearly shown that the nerves of tactile sensation were distinct from those which conveyed painful impressions. MR. BALLANCE said he was present at the operation performed by Mr. Horsley, and mentioned the difficulty which had arisen from their not knowing the precise spot at which the sensory nerves were given off from the cord. That point had since been worked out by Mr. Shattock and others, and they were fairly agreed at present as to their origin. In Mr. Horsley's case he removed the laminæ of four vertebræ without finding anything, but on the removal of a fifth they fortunately came upon the tumor, and the operation had proved successful. He congratulated Mr. Allingham upon the results he had obtained. He himself had seen a good many cases of fracture of the spine, but he had not treated them in the way suggested by the author. He observed that the great difficulty was to know how far the cases would recover without any interference. He supposed that Mr. Allingham would not advocate the operation being performed at once and in every case. He thought the safest plan would be to immobilize the fracture by a plaster-of-Paris jacket for a few days, until they could see what improvement was likely to take place. MR. ALLINGHAM, in reply, said he would have liked to see the cases mentioned by Dr. Routh. He had been struck by the fact that the operation did not affect the patient injuriously in the slightest degree. With reference to the time of the operation, he said he thought it ought to be done early, and his plan was to wait—say a week—and, if no sign of improvement was manifested, to operate. Delay always led to changes being set up in the cord.—*British Medical Journal*, April 13, 1880.

CHANGES IN THE BONES IN OLD AGE.—In the *Illustrated Medical News*, March, 1889, page 193, Prof. HUMPHREY contributes an article on the changes in the bones in old age, and illustrates his remarks with some valuable illustrations. To the naked eye these changes consist in an absorption of the cancellous structure, commencing in the parts which are most cancellous, that is, where the bony plates are thinnest, where the marrow is most abundant and most vascular, where the leucocytic and other agents in absorption are most abundant, where, accordingly, we might expect the processes of absorption to be most ready to take advantage of any failure in the nutritive and resisting qualities of the bony tissue. In the early condition the several parts of the skeleton are solid; as they become hardened and added to at the exterior, they become hollowed out in the interior into cancellous spaces, medullary canals, and air-containing cavities; this change continues through life in gradually diminishing degree; and as old age advances, the subtraction from the interior exceeds the addition to the exterior, and the bones gradually decrease in weight and strength. The muscles at the same time become weaker, so that it is almost as rare to have a spontaneous fracture of a bone from muscular action in old age, as it is in youth or middle age. The author shows by diagrams how in old people the head of the femur becomes thinned and liable to fracture. This predisposition to absorption in the cancellous parts is met with in the ends of the long bones in all aged people, which causes their liability to fracture. The tendency to absorption of the cancellous parts of the skeleton is also seen in the alveolar processes of the jaws, whereby the teeth are loosened and often drop out. In the body of the lower jaw these changes are very marked; the thin lower bar alone remains with the mental foramen upon or near the upper edge; in the upper jaw alveolar processes become, in course of time, completely cleared away; the level of the palate is continued to the margin of the bone, the whole maxilla (the walls of the antrum more especially) becomes very thin, and the nasal spine and the cheek-bones are left outstanding in relatively strong relief. An exception to the progressive cancellous absorption and diminution of weight in the bones of old people is not unfrequently to be found in the skull, more particularly in the calvarium. This part in some cases becomes very thin and light; in others it becomes thicker from deposit on the interior consequent probably on the lessening of pressure upon it associated with the brain-shrinkage of age; in some of these latter cases it is very porous, the diplöe being increased; in others, however, it is dense and heavy, as well as thick, the diplöe being encroached upon and perhaps obliterated. The contrast in some cases presented by the thick heavy calvarium, and the thin light facial bones, is very striking; the skull of many old people weighing many ounces over the average, and this is due to increased thickness and density of the bones enclosing the cranial cavity. This senile thickening and "senile sclerosis" differ from the changes in osteitis deformans, inasmuch as they affect the interior of the skull and the diplöe rather than the exterior. So far as the author knows, the cranial wall is the only part of the skeleton in which this process occurs. The increased density and weight of the skull when the rest of the skeleton is becoming less fitted to bear weight is a strange and not easily intelligible anomaly.—*London Medical Recorder*, April 20, 1889.

THE DURATION OF LIFE IN CANCER OF THE BREAST.—The average duration of life in cases of mammary carcinoma is very variously estimated by different observers, ranging from 28 to 55 months in those not operated upon, and from 32 to 53 months in cases in which the new growth

has been removed by the knife. Thus Gross, whose statistics are among the least hopeful, gives as the average duration of life, of those in whom the disease had been permitted to run its course, 27.1 months, and of those operated upon about 39 months. Sibley's figures for the same classes of cases are 32.25 and 53.2 months. Baker makes the average, for cases uninterfered with by operation, 43 months, while Paget's estimate for the same class of cases is 55 months.

By far the most hopeful figures which we have seen are some given by Mr. W. R. Williams, in *The Lancet* of January 12, 1889. He has recorded and tabulated all the fatal cases of cancer under treatment at the Middlesex Hospital during the last six years, with the result that the average duration of life, dating from the time when the disease was first noticed, was 60.8 months for those who had undergone operation, and 44.8 months for those in whom the disease ran its natural course. The longest duration of life when the breast was amputated was 297 months, and when no operation was performed 194.7 months. The author thinks that his statistics justify surgeons in taking a less despondent view of mammary carcinoma than is ordinarily taken.—*The Medical Record*, March 30, 1889.

Charcot on Suspension in the Treatment of Progressive Locomotor Ataxy.—Professor Charcot recently gave a clinical lecture on vertical suspension of the body in the treatment of progressive locomotor ataxy and some other diseases of the nervous system. This novel method of treating tabes dorsalis was first initiated by Dr. Motchoukowsky, of Odessa, who published a *brochure* on the subject in 1883; but it received no attention in Western Europe till 1888, when Professor Raymond, of Paris, while on a scientific mission in Russia, was struck with the results presented to him. Dr. Ouanoff, his fellow-traveler (a pupil of the Salpêtrière clinic), showed his practical application there. In Motchoukowsky's pamphlet considerable improvement was ascribed to it in twelve tabetic persons; also in various neurasthenias, independent of tabes, in which the sexual functions were reëstablished by this treatment. The patient is suspended for about three minutes by a Sayre's apparatus, and the arms of the patient while suspended are raised every fifteen or twenty seconds to increase the traction on the spinal column.

Charcot's tabetic patients numbered eighteen, with 400 *séances*. Of these, four were only suspended each three times; the rest went on regularly. Of these Professor Charcot says: "The remaining fourteen have experienced in varying degrees an improvement, which in eight has been quite remarkable." All were pronounced tabetics. Walking is improved to begin with; the patients say they can walk better after the first suspension. This improvement at first lasts only a few hours, but after eight or ten sittings persists. After twenty or thirty sittings Romberg's sign disappears. Then vesical troubles are lessened or removed; also the lightning pains. Sexual impotence gives place to sexual desires and erections. (Experiments by Dr. Ouanoff on healthy persons have shown that this method has an exaggerating effect on virility.) The cotton-wool feeling in the feet gives away more or less to healthy sensations, and in general the whole health improves. Every patient steadily improved, with one exception, a young tabetic, aged 32, who at first improved, then fell off, then again improved somewhat. But the knee-jerks have not reappeared in any of the patients after three months' treatment, nor are the pupillary symptoms altered. As to other diseases, a young female with Friedreich's disease was greatly improved by the treatment. In two neurasthenic and impotent patients the sexual functions were reëstablished. But a patient with disseminated sclerosis was made worse, for after two sittings a spasmodic paraplegia appeared, which, however, gave way in three days. Further trial of this method is required before an opinion of its value can be given. The results are most encouraging so far, and at any rate perfectly harmless.—*London Medical Recorder*, March 20, 1889.

On the Treatment of Renal Colic.—Dr. Christoph, of Constantinople, was called, some time ago, to the wife of a Jewish banker, who suffered from renal colic and had been treated for three months by the best physicians with chloral hydrat, antipyrin, morphium and lythium benzoate. The woman is 23 years of age, weak, without children although married three years, extremely nervous, which is inherited from her father, who is afflicted with cramps and nervous diseases. In the urine gravel and calculi were found, which chemical analysis proved to consist of urates. Despite daily doses of 5 centigrams of morphium she had constant pains, which deprived her of sleep during the night, impaired digestion, and still more shattered her nervous system. In view of the unsuccessful analytic therapy he remembered having read in Frerich's well-known work on liver diseases Trousseau's prescription for renal colic, consisting of inhalations of chloroform at every attack of pain. To his agreeable surprise the patient informed him, on a subsequent visit, that she was entirely free from pain after inhaling for twenty seconds, and that she had been obliged to repeat the inhalation only three times during the day. Later on he alternated between this remedy and butylchloral, 5 grams in 120 grams of water, with 10 grams of spir. vini rectif. and 20. gr. glycerine, of which 2 or 3 tablespoonsful

daily, taken quickly one after another, relieved her immediately, or between chloroform and urethan, 3 or 4 gr. daily. To dissolve the stones he added daily 3 teaspoonfuls of magnesia bor. nitr. with sugar dissolved in water.— *Internationale Klinische Rundschau*, 1889, No. 13.

ON SECONDARY INFECTION IN SCARLET FEVER.—DR. MARIE RASKIN, of St. Petersburg, from a series of clinical and experimental investigations, draws the following conclusions: 1. The malignant complications occurring in scarlet fever: lymphadenitis purulenta, phlegmone, otitis purulenta, synovitis purulenta, broncho-pneumonia, pleuritis, pyæmia and septicæmia, perhaps also diphtheria and serous synovitis, are caused by a secondary streptococci infection, other microörganisms possibly having a share in the origin of some of the above processes, as pyogenous staphylococci in otitis and micrococcus pyogenes tenuis in pyæmia. 2. The introduction of the streptococci occurs through the primarily inflamed throat, whence they extend through the lymph channels and thus get into the blood. 3. The streptococci having invaded the blood there are three possibilities: *a*, the cocci may disappear from the blood without any consequences except more or less fever; *b*, they may increase rapidly in the organs and cause death by general septic infection; *c*, oftener they may cause death by pyæmia. 4. The chain coccus occurring in scarlet fever may be regarded as a variety of the well-known streptococcus pyogenes. 5. It is not the cause of scarlet fever.— *Centralblatt für Bakteriologie und Parasitenkunde*, 1889, No. 14.

ON THE VALUE OF INHALATIONS OF HYDROFLUORIC ACID IN TUBERCULOSIS OF THE LUNGS.—DR. L. POLYAK, in the Society of Physicians in Budapest, declares that by abundant experience with this new mode of treatment, he has arrived at the following conclusions: 1. The bacilli in the sputa increased in every case. 2. The lung-affection grew worse in every case; in three cases the infiltration increased, in two cases considerable disintegration took place. 3. The body-weight decreased in four cases by 0.5—3 kilogr.; in one case it increased by 0.5 kilos., but the other symptoms became worse. 4. In two patients before the inhalations only moderate increase of temperature occurred; during the cure considerable increases in temperature were observed; in a third case the fever increased. 5. In four cases the vital capacity decreased by 100–600 cm.; in one case it increased by 100 cm., although in this case infiltration made progress. 6. The mode of cure is certainly harmful, inasmuch as patients have to stay in a small enclosed room for a long while whose air is not in keeping with the demands of hygiene. From all of which it is seen that these inhalations are not only, not beneficent, but absolutely harmful.— *Wiener Med. Wochenschrift*, 1889, No. 13.

INCREASE OF BODY-TEMPERATURE AS A PARTIAL SYMPTOM OF VIS MEDICATRIX NATURAL.—DR. DOCHMANN (Kersan) declares that in infectious fevers the increase in body-temperature should not be considered *a priori* as harmful, but that it probably rather contributes to render the infectious virus harmless. He reports independent experiments of his own which seem to support this, so far, but hypothetical view. When cats that had been poisoned with curare, were put into the thermostat and subjected to an artificial increase of warmth, they recovered rapidly from the intoxication, which was not the case in animals kept in a normal temperature. In view of the close toxocological relationship between curare and various ptomaines, the significance of these experiments for the question under discussion cannot be overlooked. Similar results were obtained by Dochmann with animals into whom decomposing substances had been injected.— *Wiener Medicinische Wochenschrift*, 1889, No. 13.

ETIOLOGY OF TETANUS.—M. VERNEUIL, in a paper read before the French Academy of Medicine, dwelt upon the virulence of soil contaminated by the dejections of tetanic horses. He insisted on the frequency of tetanus in wounds of the lower extremities; thus, in Havana, out of 162 patients suffering from tetanus, 132 contracted it from wounds on the legs and feet. The disease is frequent in persons who, after being wounded, get in contact with the soil, as in cases of comminuted fracture, in which the bones are forced into the ground, and crushing of the bare feet; also when earth is used as a dressing, and when the wound is inflicted by an agricultural implement. Experiments made with ordinary soil and soil known to be contaminated strongly support this view. Certain soils seem to preserve their virulence much longer than others, and stagnant water seems to favor the proliferation of the microbe.—*London Medical Recorder*, April 20, 1889.

CANABIN IN GRAVES' DISEASE.—VALIERI, after using cannabin in three cases of exophthalmic goitre, recommends the following formulas:—

	Cannabin	gr. iv ss
	Sugar of milk, q. s.	Mix.
	Make 5 pills.	
S.	To be taken in 24 hours.	
	Cannabin	gr. iv ss
	Distilled water	ʒ iij
	Syrup of orange flowers	ʒ j
S.	Take in teaspoonful doses in 24 hours	Mix.

Or we may prescribe a decoction of 2 or 4 100th parts, or doses of ♏ 15 or 30 of the tincture.—*Wiener Medical Presse*, No. 41, 1888.

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SATURDAY, MAY 11, 1889.

ETIOLOGY OF INSANITY.

We are indebted to the *Occidental Medical Times* for advance sheets containing a good abstract of the proceedings of the California State Medical Society, in San Francisco, April 17, 18, and 19, 1889. The report of a Committee on Mental Diseases and Medical Jurisprudence, was read by DR. J. W. ROBERTSON of San Francisco, in which he discussed at some length the causes of insanity, and especially the influence of civilization and mental culture. The assertion has been often made that insanity in its various forms, is decidedly increasing beyond the ratio of increase of the population, in all the more civilized countries. But the report says, "if there was any actual increase in the numbers of the insane, relatively, throughout the whole civilized world, statistics have failed to show it." It is suggested that the apparent increase is owing largely to the greater attention given to the insane during the present century. The building of asylums and homes for their humane treatment, and their more careful enumeration in each succeeding census, with less motives for their concealment by friends, have caused the true number relative to the whole population, to be ascertained more accurately. The more detailed and complete census enumerations have also offered better facilities for ascertaining the relations of the various occupations and classes of people. Whether civilization actually exerted any intrinsic influence in the production of insanity, Dr. Robertson expresses serious doubt. The two most prominent factors belonging to higher civilization, are heredity and education with its more intense activities. Regarding the first, it was stated that the records of the Napa Asylum embraced 4,280 cases of insanity, of which 213, or only 5 per cent. were attributed to hereditary influence. Of the whole number recorded at Napa, 2,700 were males, only 33 of whom were professional men, and only 230 who could be regarded as belonging to the educated classes; 450 were classed as artisans, and the remaining 2,000 were laborers or without active occupation, and very largely of foreign birth. It was stated in the report that, "a large foreign population and a large insane population go hand in hand; and the foreigners in this State, (California) who constitute one-third of the population, furnish two-thirds of the insane." Dr. J. H. Brainard, of Los Angeles, stated that he had examined the record of some 8,000 cases of insanity with reference to the influence of education or brain work, and he found that the professions had but a very small representation, the laboring classes being in the proportion of 90 per cent.

DR. G. W. GRAVES, of Petaluma, had been engaged in the examination of persons charged with being insane, for near twenty years, during which time he remembered of but one subject who was a professional man. While the facts given in the report of Dr. Robertson and those elicited in the discussion following the reading of the same, show that in California the ratio of the insane to the whole population is one to three hundred, and that three-fourths of the insane belong to the class of least education and mental activity; the same relative ratios do not prevail in all the States. Yet, it is true in all the States, that much the highest ratio of insanity is found in the laboring classes of limited education, both native and foreign; while the lowest ratio is found in those of the most extended education and most active intellectual work. Consequently it is fair to infer that the progress of civilization, so far as it relates to the development of the moral and intellectual faculties, and the advancement of all the sciences and their application to the arts and the various departments of human industry, has no tendency to derange the mental faculties or to increase any of the forms of insanity. And it is probable that so far as the number of insane has increased faster in population than the increase of population, in this

country, such increase is owing entirely to the large annual immigration from the poorer and least enlightened classes of Europe.

But while the advancement of true civilization with its ever increasing and varied mental activities, affords no proof of being a direct cause of insanity, its influence in strengthening the ambition of even the least enlightened classes for more wealth and better social position without removing from them certain habits and vices that are ever mocking their ambition and defeating their efforts, while stealthily undermining their physical health, may be justly regarded as an efficient though indirect cause of insanity.

There is no condition of the human mind that more strongly predisposes to insanity than protracted *anxiety*, which consists in a more or less intense desire for the accomplishment of a certain object coupled with a constant fear of failure. The ranks of the great laboring classes, especially in this country, are full of individuals and families inspired with the anxious desire to improve their pecuniary, social and educational condition, but whose baser passions and vicious indulgencies either absorb so much of their earnings or tempt them into such unlawful acts, as not only disappoint and disgrace the man, but send the arrows of long dreaded disappointment and despair deep into the minds of the wife and children. One of the most prolific causes of intense and continued anxiety, ending often in both physical and mental ruin, is the use of alcoholic or fermented and distilled drinks that takes directly from the earnings of labor in this country more than $500,000,000 anually, and brings the most intense and protracted anguish to the minds of many thousands of innocent parties. In regard to this one influence, Dr. Brainerd, in discussing the report of Dr. Robertson, made the following statements: "Regarding alcohol it is difficult to obtain the figures. The statistics ordinarily obtainable were those from patients sent to the insane asylums. From these you could not find more than *one* case in *ten*. On getting the histories of the cases we find that alcohol as a direct cause does not play so important a factor as it does as an *indirect* cause. He had investigated some 90,000 cases, and found that the percentage attributable to alcohol was less than 8 per cent. His own experience in some four or five thousand cases satisfied him that the indirect proportion with which alcohol should be credited was nearly 16 per cent.; and some even placed it as high as 25 per cent." It is thus seen that these very cautious inferences make the direct and indirect influence of alcoholic drinks the cause of 25 per cent. of all the cases of insanity in this country.

TYPICAL FORMS OF DISEASE MODIFIED BY CLIMATIC AND LOCAL CONDITIONS.

Apropos to the remarks of THE JOURNAL in its issues of April 13th and 20th, on the "Preferable Climate for Phthisis," brought out by the paper of DR. DENISON, it now extends its consideration of climate so as to include its modifying and typifying influences on diseases generally, and on some of the more prevalent diseases of given localities particularly. Much may be gained by a careful survey of the changing and varying types of diseases prevalent in our respective fields. A careful retrospective study of the various potencies which may have played a more or less important part in stamping prevailing diseases generally with their peculiar types, is productive of great good. We may look over the field of battle after the smoke and din have gone, and note with much clearer sight the relative position of the forces employed, than could have been done during the strife; and so it is with our struggles with disease. We may profit much by the study of past experiences.

Take, for illustration, typhoid fever as the disease, and take New England, Pennsylvania and Ohio for one part of the field, and Illinois, Iowa and Nebraska for the other part, the same observer transplanted from the former part of the field to the latter will be strongly impressed with the marked differences of type of the disease in question, as observed in different parts of the field. He sees it in one locality a *typical* disease; he sees it in another locality an *atypical* disease. Why the difference? There can be no doubt as to the identity of the disease in the two parts of the field; but the difference in type is striking and perplexing. We turn at once to climatic influences for a solution of the problem. In this there are many factors. Each plays its peculiar rôle in the typification of diseases. There can be no doubt about that. Impurities of atmosphere are many and dependent on a

multitude of circumstances. In this the nature and composition of the soil, its state, as to rest or disturbance, has much to do with the purity of the atmosphere in any given locality. In the eastern end of our field the soil abounds in good clay, sand and rock, and in the western end a deep, black vegetable loam prevails. This loamy soil is abundantly productive, and the great ease with which it can be brought under cultivation, makes agriculture on an extensive scale possible. Hence the area of soil undergoing the agitation incident to grain culture is comparatively very great. Our knowledge of the nature and character of malaria is as yet limited, but whatever it may be, we know that it thrives best on decomposing animal and vegetable matter; that it requires certain degrees of heat and moisture for its greatest activity. Hence we have in the western end of our field the conditions prevailing which most strongly conspire to impregnate the atmosphere with malaria.

In this, facts comport with theory. We have in this part of our field a *malarial climate*. This makes itself manifest in a multitude of ways. At times, and in certain localities, malarial diseases prevail to a large extent, at other times and in other localities it requires other disturbing influences to bring to the surface evidences of its activity.

Perhaps it may be a wound of inconsiderable gravity, but sufficient to make its shock felt throughout the fabric; perhaps it may be the disturbance incident to child-birth; or the commotion which obtains in acute rheumatism; or the much greater molecular disturbance which obtains in typhoid fever, the effect is largely the same. Sometimes a comparatively slight injury to an important joint, such as the hip, knee or ankle, the shoulder, elbow or wrist, the shock, though slight it may be, resulting from such violence may develop into symptoms of an alarming nature and embarrass the surgeon greatly. But when the malarial factor is once recognized and taken fairly in hand, the progress and history of the case to a successful issue is simple enough.

The puerperal woman may at any period of the lying-in state manifest symptoms of an alarming character; she may have had a severe chill, followed by high temperature, copious perspiration, great exhaustion, and all the symptoms usually attendant on puerperal fever. A prompt recognition of the malarial character of the complication, and the employment of appropriate therapy will dispel consternation and guide the patient to an early and safe recovery. On the other hand, a mistaken diagnosis will increase and intensify the complication.

A case of acute articular rheumatism may present a marked set of symptoms, but if carefully analyzed and interpreted, and the appropriate anti-malarial remedies employed, the complications disappear and the case proceeds to an easy and successful termination.

Typhoid fever occurs in a community, the symptoms are not regular, there are no typical cases, all of a mixed or masked character, all run an irregular course, yet all are of unmistakable typhoid origin, all manifest some of the regular symptoms of typhoid fever, none however have the full measure of typhoid characteristics, and none present more than one, or at most two, unmodified typhoid features.

Complications of rare and unusual character occur; one line of complications prevailing in one locality, and another set entirely different obtaining in another.

In a circumscribed district hæmorrhage from the intestinal tract may prevail to an alarming extent. Perhaps two out of five cases may present this fearful and largely fatal symptom. In another district, it may be at no very great distance from the former, inflammation and suppuration of the parotid gland may be the predominating complication, this untoward feature of the malady occurring in a large percentage of the cases, with the odds largely against the recovery of any case in which it occurs.

In still another district, perhaps not a score of miles distant from either of the former, still another complication of special significance occurs, with equal constancy, but with perhaps less prognostic fatality, in which the nerve centers are so impressed that aphasia and other manifestations of a similar character occur with marked regularity. These modifications, these differences, these varied complications, are undoubtedly the offspring of climatic influences, but just how much of a figure the malarial factor may play in the production of these phenomena, and to what extent their occurrence may be due to other and less demonstrable climatic conditions, is difficult of definite determination. The fact is

readily established, however, that malaria is the prevalent modifying influence in the class of cases cited. This can be done by the timely and judicious employment of our most reliable antimalarial agent, quinine.

These facts are worthy of careful study and investigation. The study of climatology should engage the most earnest efforts of our schools and colleges throughout the country. A clearer understanding of the influences of climate in the production and modification of diseases would go far toward solving problems hitherto unexplained.

ALLEGATIONS OF HARSH TREATMENT OF THE INSANE.

During the last few years the reading public has been often shocked by reports of great cruelty and sometimes deaths from harsh treatment of the insane in public asylums for the care of that unfortunate class. One of the most recent of such reports has come from the Cook County Asylum for the pauper insane, in which an inmate named Burns is alleged to have died in consequence of the kicks and blows inflicted by two or three of the men employed as attendants. The post-mortem showed evidences of most extensive bruises, with fracture of one rib and the sternum. The primary judicial proceedings developed evidence that the Asylum is greatly overcrowded with patients and managed with a very inadequate number of attendants, many of whom, owing to the small wages paid and the repulsive nature of the work, are taken from the more rough and ignorant classes of society. While such conditious exist, it is unreasonable to expect that exhibitions of ill temper and inhuman violence will not often occur. No time should be lost in making such additional accommodations as will suitably provide for all the inmates; and no medical man should consent to take the superintendency of such an institution unless he is permitted to select and employ a sufficient number of intelligent and humane nurses or ward attendants to maintain order and reasonable discipline without exhibitions of ill-temper or the infliction of personal violence on the poor inmates.

EDITORIAL NOTES.

TIMES AND REGISTER.—We learn from *The Medical Register*, April 27, 1889, that a union has been effected between *The Register*, *The Philadelphia Medical Times* and *The New York Dietetic Gazette;* and that on May 4th the united journals will appear under the title of *The Medical Times and Register*, with Dr. William F. Waugh, of *The Times*, as chief editor. Dr. John V. Shoemaker retires, on account of the pressure of other literary engagements, but the remaining writers hitherto engaged on the three, will continue their work for the combined journal.

OHIO STATE MEDICAL SOCIETY.—The forty-fourth annual meeting of this Society is to be held in Youngstown, Ohio, May 22d, 23d, and 24th, 1889. A full programme of work has been arranged, and railroads promised the usual reduction in fares, on the certificate plan. P. S. Connor, M.D., President, Geo. A. Collamore, M.D., Secretary, Toledo, Ohio.

THE STATE MEDICAL SOCIETY of Wisconsin will hold its next annual meeting in Milwaukee, commencing on the *first* Tuesday in June, 1889. For further information apply to J. T. Reeve, M.D, Appleton, Wis.

THE INDIANA STATE MEDICAL SOCIETY held its annual meeting in Indianapolis, May 1st and 2d, 1889. A good number of members were present. Dr. J. F. Hibberd, of Richmond, Indiana, as Chairman of a Committee, stated that there are 4,163 registered physicians in that State. Of this number 3,243 are regular physicians, of whom about 1,300 are members of the State Medical Society; 287 are classed as eclectic; 199 as homeopathists; 142 as physiomedical, and 192 unclassified. On the second day of the meeting the following were chosen as officers of the Society for the ensuing year: President, Dr. J. D. Hatch, of Lawrenceburg; Vice-President, Dr. S. T. Yount, of Lafayette; Secretary, Dr. E. S. Elder, of Indianapolis; Assistant Secretary, Dr. T. C. Kennedy, of Shelbyville; Treasurer, Dr. F. C. Ferguson, of Indianapolis; and Committee on Necrology, Dr. J. F. Hibberd, of Richmond.

THE NORTHAMPTON COUNTY (PA.) MEDICAL SOCIETY will hold its fortieth annual meeting in Easton, June 20, 1889, at which time a complimentary dinner is to be tendered to Dr. Traill Green, the founder of the Society, and one of the most meritorious members of the profession in the State.

SOCIETY PROCEEDINGS.

Medical and Chirurgical Faculty of Maryland.

Ninety-first Annual Session, held at the Hall of the Faculty, Baltimore, Md., April 23, 24 and 25, 1889.

DR. JOHN MORRIS, PRESIDENT, IN THE CHAIR.

DRS. G. L. TANEYHILL, ROBERT T. WILSON AND WILLIAM B. CANFIELD, SECRETARIES.

TUESDAY, APRIL 23—FIRST DAY.

THE PRESIDENT'S ADDRESS.

After greeting the members, he said that the Faculty was now celebrating its ninety-first birthday, and that he had watched its career for nearly a half century, and was the only surviving member who had entered its gates by examination. He then addressed the members on the following subject:

THE PHYSIOLOGY AND PATHOGENESIS OF CRIME. HOW FAR CAN MEDICAL MEN AID IN ITS PREVENTION?

The teaching of the day appeared to be to make the physician a naturalist and a physicist. In studying these sciences the higher study should not be neglected—the study of society; the study of man, and his relations to his fellow-men, the advancement of the race through its physical cultivation. Millions of diseased men remain uncared for and the causes that have led to their degeneration are overlooked and unstudied. Physical culture is studied in the schools, but the character is not built up. We attempt to reform criminals, to rehabilitate them and ameliorate their condition. We should use prophylaxis. To prevent a man from becoming a criminal we must begin with him as a child. There is nothing practical in our moral and religious education. Even the sense of right and wrong is not clearly, effectively and practically taught. It is only the education that seeks to stimulate every noble purpose and capacity that can avail to form or change character, and this kind of education is not obtained in the school and the church. Every one cries out against immorality, but no steps are taken to create morality—to make morality a public sentiment; to make it a subject of national pride. Yet these are the prominent, the prevailing influences in Japan. There crimes of violence and outrage are scarcely known.

Where the law of heredity is recognized it is the duty of the medical man to forewarn parents, and to suggest the proper education and surroundings to render innocuous the taint of blood. This law of heredity obtains even more in moral than in physical traits, although the latter also, as we know, can be transmitted. "Breeding back" would often render a happy change in our economy. "Begin with the man's grandfather if you wish to reform him." The family doctor has disappeared, but he must be brought back, to occupy a higher and a wider field. We are born with unalterable tendencies which are not always evil. The Jew and the Gypsy are examples of unalterable types. Psychology rarely enters into the education of a physician, and yet the questions of moral responsibility are associated with it. Ordinarily the physician treats the body alone, irrespective of the mental organization. He is but half a physician. The body yields to the mind, the mind to the body rarely. The weakness or total absence of certain powers of mind is rarely noted in children, and yet this observation is of the highest importance in shaping their future lives. The physician should be consulted in regard to the education of a family of children, and to do this he must have been trained by a long course of mental observation.

No man is born a criminal. We are not taught to value the truth. Perjury is the most common crime in our country, and yet it is rarely punished. The church and State have done little to regulate marriage, except the Roman Catholic church and the Church of England. Marriage should be regulated by law. Paupers and criminals should be prevented from marrying. The Legislature of Kentucky has a bill before it to regulate marriage. The tramp and malingerer should be stamped out; they need not exist. It is as harmful to bring insane children into the world as it is to drive them insane by bad usage. The habitual criminal, man or woman, should be deprived of the power to procreate.

In all our original research, let us not forget these questions. Let it be directed to the foundations of life; to the evolution and structure of character; to the evolvement and building up a higher intellectual and moral constitution of the race; not to a childish search after pebbles and toys, of jackstraws in place of the true gold. In any and every event our work will go on—our profession will live as long as the ages endure. The more we advance in knowledge, the more the world will need us. As the astrologist, the alchemist, the barber of the Middle Ages, gave place to the pompous and pedantic oracle of the seventeenth and eighteenth centuries, with his latinity, his lancet and his squirt—the last like the spear of Telamon, which healed at one end the wound inflicted by the other; and as the oracle was followed by the man of the present time, with his ologies and marvelous nomenclature, his thousands of drugs, his hypodermic syringe and his microscope, seeking after the unseekable; so, in the future, this present man will be succeeded by a race of men of advanced thought, of truer convictions, of stronger culture, of higher and

broader views; to the end that the State may be enlightened and improved, humanity benefited, and religion exalted.

WEDNESDAY, APRIL 24—SECOND DAY.

DR. WM. OSLER, of Philadelphia, delivered the *Annual Oration.* (See page 649.)

Section on Surgery.

DR. RANDOLPH WINSLOW, CHAIRMAN.

The chairman called attention to the subject of

SURGERY OF THE CENTRAL NERVOUS SYSTEM,

and dwelt especially on the importance of understanding thoroughly the general and topical anatomy of the brain, and then referred to the important results obtained by experiments on animals, by clinical observations, post-mortem examinations, and by electrical stimulation of the exposed human brain during the performance of surgical operations. The cortex and base are most accessible and amenable to surgical procedures. Tumors of the brain are of more frequent occurrence than general practitioners think. W. Hale White and Victor Horsley have done the best work here. Cranio-cerebral topography is a new and very important study and has been mainly used in the surgical treatment of epilepsy, brain abscesses. The study of

SURGERY OF THE SPINAL CORD

is of more recent date. Few cases have been reported.

In the same Section DR. OSCAR J. COSKERY reported a case of

TREPHINING FOR CEREBRAL ABSCESS,

with the result of removing the pus and giving motion to a paralyzed arm and leg, but the patient subsequently died.

DR. JOHN C. JAY then reported

A CASE OF ENTIRE EXSECTION OF THE ULNA WITH RESECTION OF THE HUMERUS AND RADIUS,

in a woman 49 years old. Complete anchylosis did not occur and the elbow remains movable to the extent of several inches, and thumb and two fingers can be used. The operation was fully justified by the excellent results.

Section on Practice of Medicine.

DR. WILLIAM B. CANFIELD, CHAIRMAN.

DR. CANFIELD took up the following subjects:

I. THE RELATION OF DUSTY OCCUPATIONS TO PULMONARY PHTHISIS.

He began by saying that the pulmonary diseases caused by the different kinds of dust had received a variety of names according to the character of dust inhaled, but collectively they were all covered by the name "pneumonocomiasis." Ever since Koch's discovery of the tubercle bacillus, and the gradually improved classification of lung diseases, there seemed to be doubt whether these dust diseases were tuberculous or not. The dust inhaled by miners in badly ventilated mines gradually overcame the action of the ciliated epithelium and penetrated to the alveoli of the lung, whence they found their way into the subepithelial layer, where, unless rendered harmless or devoured by the greedy phagocytes, they set up a fibroid condition of the lung. Most writers agree that the fibroid condition is a barrier to the growth and multiplication of the bacillus.

He then related the case of a miner who had a fibrosis of the lungs, and in whose sputa bacilli were always found at every examination, and yet the man improved and is now well. His conclusions were:

1. Patient had no previous history of, or predisposition to, tuberculosis.
2. He contracted a disease with which tuberculosis is supposed to be very rarely found.
3. He had tubercle bacilli in abundance in his sputa.
4. He is now entirely well.

II. THE PRESENT ASPECT OF THE QUESTION AS TO THE ETIOLOGY OF PNEUMONIA.

Pneumonia results from something more than "catching cold." Sailors lead an exposed life and rarely have it. A large number of investigators have been looking for the specific organism. Talamon did some excellent work. Friedländer's pneumococcus was accepted for a time, but the investigations of Fränkel and Weichselbaum have shown Friedländer's organism to be only an accidental accompaniment of pneumonia. Good work has been done by Gamaléia, Sternberg, Lipari and others. He referred to the theory of phagocytosis in connection with this subject, and related his own experience in the bacteriological study of the organism. He then took up

III. THE MORE RECENT TREATMENT OF PULMONARY PHTHISIS,

and spoke of the failure of Bergeon's method. Treatment has been carried out by:

1. Internal administration of drugs or medicines.
2. Intrapulmonary injections.
3. Inhalations.
4. Climate. And cures occasionally occurred.
5. Spontaneously.

1. The principal remedies recommended of late were creasote, tannin, calomel and morrhuol. He had used creasote with some success.
2. Intrapulmonary injections had been discarded.
3. Inhalations had no lasting influence on the lung tissue. Creasote, hydrofluoric acid and hot air had all been used. Weigert claims to get some good effects from the latter.
4. Climate, in early cases well selected, is the

best treatment. Many observers, particularly foreigners, gauge the improvement or the reverse by the diminution or increase of bacilli found. This hardly seemed to be the proper test. Patients often do well when their sputum is laden with bacilli. Cures may result spontaneously, as Vibert has shown in his statistics gathered from the Paris morgue. In 131 persons between 20 and 55, all of whom died violent or sudden deaths, in 17, or 68 per cent., evidences of cured consumption were even found in the lungs. These facts should be borne in mind by those reporting cures from the use of new remedies.

DR. W. S. FORWOOD, Darlington, Md., said that the "flint disease," as it was called in Hartford County, was very common and very fatal with the workmen in the quarries. The men all have this disease, which begins very insidiously and grows worse. It ends like consumption, but the beginning is very different. In reply to Drs. Randolph Winslow and A. K. Bond he said that no one escaped the disease after working in the quarries, and all were permanently injured, even if they gave up the occupation in a year.

DR. J. T. WRIGHTSON, of Newark, N. J., said that lung disease was very common among the hat-makers of his city, but he attributed it not so much to the dust as to drinking.

THURSDAY, APRIL 25—THIRD DAY.

Section on Obstetrics and Gynecology.

DR. T. A. ASHBY, CHAIRMAN.

The chairman remarked first on the growing tendency to abandon empirical methods and to employ more rational views of pathology and treatment. The study of abdominal surgery claims attention. Exploratory laparotomy is the only correct means to use in some cases. Laparotomy for pelvic abscess is a subject gradually gaining upon the professional mind. Primary laparotomy in tubal pregnancy has been brought into conspicuous prominence; but the greatest interest has been aroused in the use of

ELECTRICITY IN GYNECOLOGY.

He then discussed the various diseases for which electricity had been used, and then showed how much had been accomplished by it in a short time.

DR. L. E. NEALE then exhibited

A NEW OBSTETRICAL FORCEPS

which was a modification of Howard's modification of Tarnier's. He called it "Neale's Forceps." He claims superiority on the ground that it is all hard metal, and can be made thoroughly aseptic, has Simpson lock, blades are narrow, preventing rupture of perineum. It is made by Williams, of Baltimore.

DR. P. C. WILLIAMS praised it very highly. He liked Tarnier's handles. In using it as ordinary forceps, he thought there was not force enough at the handle to manage it. It had many advantages which made it a superior instrument to the others.

Section on Materia Medica and Chemistry.

DR. T. BARTON BRUNE, CHAIRMAN, read a paper on

SUGAR TESTING, WITH SPECIAL REFERENCE TO "ALCAPTONURIA,"

in which he reviewed the various substances giving a sugar reaction, and the danger of trusting too much to one test alone.

DR. W. B. PLATT took up the subject of

SURGICAL THERAPEUTICS,

in which he considered all curative non-mechanical agencies employed in surgical cases, whether after accident, operation, or for surgical diseases. These he classified as anæsthetics, antisyphilitics and antiseptics. In the first class he discussed protoxide of nitrogen, chloride of methyl and cocaine. Under antisyphilitics were mentioned mercury inunction, hypodermic injections and gray oil. The antiseptics were carbolic acid, creolin and iodoform.

DR. WHITFIELD WINSEY then read a paper on

HYPNOTICS AND ANTIPYRETICS.

In the former class he reviewed what is now known of sulfonal, and drew the following conclusions:

1. It is a true hypnotic.
2. It is easy of administration, being without taste or odor.
3. It is safe, prompt and efficient, with objectionable after-effects.
4. No sulfonal habit contracted.

Under antipyretics he went over very thoroughly the literature of antipyrin, antifebrin and phenacetin.

DR. H. SALZER read a very exhaustive paper on

LAVAGE,

and gave the indications for its use in adults and children, and his experience with it.

In the discussion which followed, the remarks were confined to glycosuria and the sugar tests.

DR. A. K. BOND thought the testing for sugar was not so simple a method as it appeared. He thought the phenylhydrazin chloride test was the most satisfactory, but agreed with Dr. Brune that no one test should be used alone.

DR. GEORGE J. PRESTON thought it was important to know whether the amount of sugar increased or decreased.

DR. WILLIAM B. CANFIELD thought no test was reliable. He had succeeded with other tests where the phenylhydrazin chloride test had failed. He thought the use of the microscope was an ob-

jection to this test, as probably two-thirds of the medical graduates of the United States did not know how to use a microscope.

DR. J. C. HEMMETER was surprised that the saccharinmeter had not been mentioned. Salkowsky and Leube proved that it showed the presence of $\frac{1}{10}$ of 1 per cent.

DR. T. B. BRUNE, in closing, said he regretted to bring such a long discussion before the Society. The phenylhydrazin chloride test had not been long enough before the medical public to judge of it yet. Some other substance, as carbohydrater, may reduce these crystals.

Section on Sanitary Science.

DR. W. C. VAN BIBBER read a report on the subject of

QUARANTINE,

in which he discussed the Maryland Health and quarantine establishment, and referred particularly to yellow fever.

FRIDAY, APRIL 26—FOURTH DAY.

DR. F. T. MILES read a paper entitled: *A Case of Dilatation of the Stomach Dependent upon Contraction of the Pylorus* in which tetany of a typical character occurred, speedily ending in death. He could find nothing in the vomited matter to account for it.

DR. J. W. CHAMBERS submitted a paper on *Cystic Tumor of the Lower Jaw.*

DR. GEO. J. PRESTON reported a case of *Tumor of the Cerebellum* pressing on the middle lobe.

DR. J. D. BLAKE, in referring to Dr. Welch's paper, asked how the poison could be transmitted by the nerves alone? If injection into the blood does not kill, but makes the animal proof against future attacks, why not inject the substance directly into the blood of man to prevent hydrophobia?

DR. W. C. VAN BIBBER said if the temperature stated would kill the organism of rabies, this should give a valuable idea on the treatment.

DR. WM. H. WELCH remarked in conclusion that many facts about rabies were known which could not be explained. It was not understood how the virus was transmitted along the nerves, but the fact remains; and still further, this did not seem to disturb the function of the nerve. It might extend along the lymph vessels of the nerves; we know little of the composition of the lymph. He did not mean to be understood as saying that the virus did not extend through the blood lymphatics, but that we have no evidence of this. In reply to Dr. Van Bibber, he said that the method of cauterization is a good one, but it does not prevent rabies. The virus must penetrate into the nerve to be transmitted by it, and the chance of piercing a nerve in the skin by puncture is very small.

Section on Psychology and Medical Jurisprudence.

DR. RICHARD GUNDRY, CHAIRMAN.

THE CHAIRMAN read a paper on the

RELATION OF THE PHYSICIAN TO THE INSANE,

in which he spoke particularly of the frequency of monomania, and of the difficulties of recognizing true insanity by the unskilled, as a person may be entirely sane on many subjects and insane only on a few. A person totally insane has no recollection of a deed committed, while a person partly insane may remember the past partly.

SATURDAY, APRIL 27—FIFTH DAY.

Section on Microscopy, Micro-Chemistry and Spectral Analysis.

DR. CHRISTOPHER JOHNSTON, SR., CHAIRMAN.

THE CHAIRMAN read a report on: I. *The Application of Spectroscopy to the Study of the Blood.* II. *The American Objective as Compared with the German.*

Section on Ophthalmology, Otology and Laryngology.

DR H. A. MCSHERRY read a paper on *Curability of Laryngeal Phthisis;* and DR. A. FRIEDENWALD one on *Distorted Equilibrium of the Muscles of the Eye in the Causation of Nervous Diseases.*

Volunteer papers were then read by DR. S. J. FORT on *Aphasia, due to Shock of Severe Consecutive Epileptic Spasms;* by DR. JOHN C. HEMMETER on *Recent Investigations on the Physiological Activity of Alcohol,* which was the result of three years' carefully conducted work in the Biological Laboratory of Johns Hopkins University; by DR. A. K. BOND on *Aneurism of the Abdominal Aorta Bursting into the Pleural Cavity;* and one by DR. GEORGE H. ROHÉ on *A Painless and Efficient Method of Extirpating Vascular and Pigmented Nævi,* with exhibition of photographs.

The following were elected for 1889–90:

President—Dr. A. Friedenwald.

Vice-Presidents—Drs. T. A. Ashby and Chas. G. W. Margill.

Recording Secretary—Dr. G. Lane Taneyhill.

Assistant Secretary—Dr. Robert T. Wilson.

Corresponding Secretary—Dr. Joseph T. Smith.

Reporting Secretary—Dr. Wm. B. Canfield.

Treasurer—Dr. W. F. A. Kemp.

Gynæcological Society of Boston.

200th Regular Meeting, March 14, 1889.

THE PRESIDENT, W. SYMINGTON BROWN, M.D., IN THE CHAIR.

PATHOLOGICAL SPECIMENS.

DR. F. L. BURT exhibited a *fibroid of the uterus* which he had removed from an unmarried woman about 30 years old. It filled the vagina

and was attached by a small pedicle near the internal os uteri. The tumor, the size of an orange, was removed with considerable difficulty from its attachment, and when free it could be removed from the vagina only by the aid of the fingers in the rectum. The hæmorrhage, which had been considerable, gave no more trouble.

An interesting paper was read by AUGUSTUS P. CLARKE, M.D., entitled

FARADISM IN THE PRACTICE OF GYNÆCOLOGY.

In these days of brilliant theories and magnificent possibilities, he said, much is claimed in regard to the value of the galvanic current in the treatment of certain diseases of women. Results far in advance of anything that a generation ago the most enthusiastic advocates had even hoped for, have been achieved by Apostoli and his followers. The elaboration of this system of electro-therapeutics has been accomplished only by the expenditure of a vast deal of money and thought. Instruments and appliances the most ingenious, have been devised to meet the various phases and indications of what may be termed a normal departure, suggesting the adoption of remedial measures. The work in this field has many attractions, and is capable of satisfying the longings of natures the most ambitious, and of yielding a feeling of complacency, that can only be rivaled or reached by the eclat, that is sure to follow successful cases of laparotomy and ovariotomy. Indeed, the definition of the term electricity or electro-therapeutics of late in some quarters has become almost identical with galvanism. The display by the development of such special appliances are led to further inquiries in regard to the treatment of cases of a gynæcological class by the application of the faradic current. It is to be noted that the results obtained by the employment of this form of electricity have been most gratifying and give promise of the attainment of results which, without the employment of this current, could not be secured. Apostoli's method of treatment of chronic metritis and endometritis comprises an intrauterine chemical galvano-cauterization to be carried out in a strictly antiseptic manner. The sittings, though short, must be frequent if they are to be successful. The application of this method necessitates the use of special rooms and conveniences, which only a few among the larger operators are likely to have. Any departure from the prescribed plan is almost certain to be attended with much danger. When we consider the necessity of repeating frequently the sittings before we can even hope for success, we are forced to conclude that this plan of treatment will never become very popular. Operators, who have special conveniences and who have reason to hope for successful issue of the cases, will always prefer treatment by laparotomy or other surgical methods in which the lives of patients in most instances are to be jeopardized but once, than repeatedly to incur risks by the method of chemical galvano-cauterization. In the employment of the faradic current we act upon the superficial blood-vessels, we modify the nutrition of the parts, we hasten absorption of extraneous matter. All this can be done without incurring that extreme hazard which usually accompanies methods by galvanization.

The faradic current has a markedly sedative effect upon the parts, and when judiciously and intelligently applied the patient often feels a sense of relief, and will return for further help. Even in cases in which marked inflammatory processes are present, the faradic current may be resorted to with much benefit. In a paper presented to the Association of Obstetricians and Gynæcologists, Washington, D. C., September, 1888, I reported several cases of salpingitis, in which the treatment supplemented by faradization was productive of much benefit. Cases in which the abdominal walls were soft and unusually relaxed from want of tone, or in which there was undue distention induced by various lesions were greatly relieved by the employment of the faradic current. The following cases are appended to show the more favorable results of the treatment.

Case 1.—Mrs. K., æt. 38 years, mother of one child, 13 years old, notified me July, 1888, that she expected to be confined in September following. I saw the patient July 21, and made careful examination, and found that she was not pregnant. Her menses had appeared at irregular intervals, but the distension of the abdomen was so great that she supposed herself pregnant, and had made elaborate preparation for confinement. The bowels were regular, she had fair appetite, and the urine appeared normal. There was some pain and tenderness over each ovary. The circumference of the abdomen was greater than normal and the patient fancied she felt fœtal movement. The uterus was soft and relaxed and was anteverted, but not to such degree as to cause vesical disturbance. I began with the use of the faradic current with slow interruptions over the abdomen and the cervix, while over the ovaries on the outside frequent interruptions of the current were employed. Occasionally an intra-uterine electrode was employed while the other pole (usually the negative) was connected with the wire brush. The patient quickly improved under this method of treatment. Abdominal distension subsided, and the pain and discomfort in the ovaries disappeared. The sittings were continued at intervals of three days, and each occupied from five to ten minutes, and covered a period from August 14, to November 17, 1888, since which date she has been in good health.

Case 2.—Mrs. O., mother of three children, the

oldest 12 years, the youngest 4 years. This patient had been an invalid for several years. There had been an old perineal laceration though no prolapse nor any vesical disturbance. The cervix was thickened and indurated. There was no leucorrhœal discharge nor any history of an acute inflammatory process. The patient had worn several kinds of pessaries, but said that she had never experienced any special benefit from their use. The principal trouble complained of when she came under my care, was pain in the back and left ovarian region, and at irregular intervals attacks of severe pain in the head, attended with symptoms which showed that hysteria was an important element in the disease. As this patient had been under the usual routine of several able practitioners, I advised discontinuance of the use of all supporters and other means of treatment heretofore received, and began with employment of the faradic current. The treatment was commenced in the early part of August and was continued at intervals of three and four times a week, each application of the current lasting eight minutes. Over the more painful points the current with frequent interruptions was used. Along the muscles of the back and areas of great sensitiveness the current with slower interruption was selected. The negative pole with an intra-uterine electrode was applied. After the third application of the current the patient showed signs of improvement. The treatment was persevered in regularly for two months. After that the séances were continued at longer intervals. The treatment was supplemented with an alœtic purge and followed by the daily use of gentle aperients. The patient, though not fully restored to health, so far recovered as to be able to attend to her domestic affairs, and to go out and enjoy many of the comforts and pleasures of life. It is highly probable that eventually an operation for the restoration of the perineum will have to be undertaken.

Case 3.—Mrs. S., æt. 26 years, married five years, miscarried after the third month of pregnancy. The placenta was retained upwards of sixty days. When I was called there was flowing and a fœtid discharge. I succeeded in effecting an entire removal of the placenta. The patient after that rapidly improved, but was anæmic, and the tissues were soft and relaxed. After four months the patient returned to me complaining of vesical disturbances. Vaginal examination showed that the uterus was retroflexed, and that there was a well defined cystocele. The uterus was restored and the patient was directed to urinate at short intervals, and to avoid if possible the occurrence of over-distension of the bladder. After the lapse of six months, there being still considerable vesical disturbance, faradization was begun. Slow interruptions of the current were employed in the cul-de-sac on each side and over the abdomen. The séances were made every third day for four weeks and then at intervals of once a week. After the second month the patient considered herself to be cured. Recent examination showed that, though the patient had received no treatment for nearly six months, the cystocele had not returned, and the retroflexion was of no consequence. The patient is now strong and in good health.

Case 4.—Mrs. R., aged 38 years, mother of two children, the youngest of whom was 15 years. After the last confinement she suffered very much from catarrhal endocervicitis, but the menses have appeared regularly. Vaginal examination showed that there had been a multiple laceration of the cervix, but the cicatrization was fully established. The cervical canal was preternaturally sensitive. The perineum had been lacerated, but nature had partially restored the rent. The uterus was retroverted. The principle trouble complained of when the patient came under my care eight months ago was pain in the ovaries. These could be distinctly felt and were not displaced. There was pain also in the back, from the lower dorsal vertebræ to the coccyx. The tendon reflex was markedly increased. The patient suffered from frequent attacks of "blinding headache." The urine was heavily loaded with urates. Under ether I curetted thoroughly the cervical canal. The uterus, after being restored, was kept in place by vaginal tampons. Butcher's meat was interdicted, and the bowels were kept open by gentle aperients. The patient improved under the treatment. After the lapse of three months slow interruptions of the faradic current were tried every third day for five weeks, and for the next four weeks once in every four days. Subsequently once in two weeks. The treatment by faradization occupied upwards of four months, and its good effect was shown by the disappearance of the increased tendon reflex and the return of strength and appetite. All pain and tenderness vanished, and the local lesions now give no trouble whatever.

Case 5.—Mrs. S., aged 38 years, mother of one child 4 years old. The patient recovered well from confinement and was in good health until January, 1888, when she sustained injuries from being thrown from a carriage. She suffered much at the time, was confined to bed. There was severe pain in lower part of back and in the bladder. She suffered more or less in micturition. There was no uterine displacement, but a sharp pain and soreness in the right ovary was complained of. After two months of rest and treatment the pain and soreness disappeared, except that in the ovary. The ovary of that side must have been affected by the shock and concussion sustained. In March following, faradism was tried. The positive pole was applied over the abdomen, and more particularly in the right in-

guinal region and in the right cul-de-sac. The other pole was applied along the lumbar and sacral portions of the spine. The wire brush on the outside was also used. The patient showed improvement after the third séance. The sittings were continued at intervals of two and three days until April 15th. Since then no further trouble has been experienced from the ovaritis, and the parts have resumed their normal functions.

Case 6.—Mrs. A., æt. 41 years, mother of three children, the youngest of whom was 9 years old. For the past five years the patient had had several attacks of rheumatism, necessitating at the time of each attack confinement to bed. When I was called she was recovering from one of these attacks which had continued from Sept. 10th to Oct. 24th. There was swelling of both knees and ankle joints, but the greatest amount of suffering appeared to be centered in the pelvic organs, especially in the uterus and its adnexa. Mineral waters and saline laxatives were employed. The use of meats and nitrogenous food was discontinued, and milk and light articles of diet were prescribed. The patient rapidly improved under the change of treatment and on Nov. 1st was free from the rheumatic affection, except weakness and discomfort in the back and genito-urinary organs. The patient was unable to walk without the aid of a cane or crutches. There was uterine dyskinesia, though no marked flexion of that organ could be made out. There was a sensible diminution of the tendon reflex and almost an entire absence of the ankle clonus. At this time treatment by faradization was begun, and continued until Dec. 12th, when the pain was overcome and the patient able to walk without artificial help. The reflexes have returned to their normal condition. The current with slow interruption was applied every second day.

Case 7.—Mrs. L., æt. 22 years, while walking on a country road during the evening of Jan. 15, 1888, sustained a fall over an embankment. At the time of the accident uterine hæmorrhage occurred. The patient is said to have complained bitterly of pain in the right hip and back. She was under treatment for six weeks, at the end of which time she had so far recovered as to be able to return to her home. The patient came under my care on the 10th of the following May. Vaginal examination showed that there was a marked anteflexion. There was vesical disturbance and considerable difficulty experienced in walking or in attempting to make any considerable exertion. A Hodge pessary gave only partial relief, but was worn until August 3d, when I removed it permanently, and began with faradic current with slow interruptions. Each séance lasted ten minutes and was repeated every third and fourth day. After the sixth application the uterine tissue appeared firmer and the organ itself on being restored retained its position much longer than before. The treatment was persevered in until October 8th, when the patient regarded herself as well as usual. Vaginal examination showed that the uterine flexion existed in a minor degree only.

In reviewing the histories and symptoms of these cases we find inflammation attended with more or less pain, and some form of neurosis was a prominent feature, and that the application of the faradic current was productive of much benefit. In Case 1, the current with slow interruptions had the effect of stimulating the relaxed muscular tissues, and of giving tone and vigor to the parts. In Case 2, the pain and reflex symptoms were relieved, and the strength and health improved, and should an operation for the restoration of the perineum be deemed advisable, the patient will be in much better condition to insure recovery. Case 3 shows the beneficial effects of the current with slow interruptions. A cystocele induced by overdistension of the bladder in a subject of weakened and relaxed muscular tissue was at length fully overcome by prolonged application of the current. Case 4 shows also benefit derived from the same current in controlling the tendon reflex and nervous excitability. Case 5 illustrates the therapeutical advantage of faradism when the wire brush is used. In the treatment of inflammation supervening shock and concussion of the ovary. Case 6 further shows the help to be derived from continued application of the faradic current in restoring reflexes to the normal condition and in exciting healthy action in the genito-urinary organs. The last case in some respects, like Case 3, exemplifies the tonic effect that may be obtained by the employment of the same current on relaxed uterine tissues.

I am in possession of notes and records of some thirty other gynecological cases in which faradization was resorted to with favorable results. In twelve of these the application was made to overcome pain and nervous disturbance arising from various lesions requiring operative interference, viz.: six for pyo-salpinx and salpingitis, four for lacerations of the perineum and of the cervix, one for uterine polypus and one for urethral vascular growths; and in nine to overcome pain and nervous phenomena due to functional disturbance, viz.: three for subinvolution, four for leucorrhœal and gonorrhœal pain, one for neuralgia of the ovary, and one menorrhagia. In two the application was made on account of amenorrhœa, in four for cystitis, and in three for hysteria and loss of power in arm and leg. These cases I report not with the view of establishing a claim for originality in treatment or for the purpose of setting aside other well-tried and settled methods, but in recognition of the fact that we have in this form of electricity for properly selected cases, after other means have failed, an agent capable of yielding most gratifying results.

DR. W. G. WHEELER said that he was glad to see a return to faradization. A good degree of success had been attained by Dr. Cutter by his method of treatment. He had in one case used Cutter's battery in treating a large tumor reaching above the umbilicus. The shock produced is profound, and it is necessary to etherize the patient. One needle was introduced through the rectum and the other through the abdominal wall. The current passed for seven minutes. An abscess was produced, which discharged for several months. The operation was performed a year and a half ago, and the tumor is now quite small and the sinus is closed.

DR. A. L. NORRIS has found better results from the use of the interrupted current. For the last eleven years he has used a battery made by Kidder, of New York, on a large number of cases with success. He has had good results in the treatment of amenorrhœa by faradization. For this, one pole is usually placed on the nape of the neck and the wire brush is applied over the loins, but sometimes he uses an intrauterine electrode.

DR. G. W. JONES: I think that Dr. Clarke should be complimented on the good results he has obtained from faradization. If we could all get such results we would be highly gratified, and not without reason; for the remedy is at once so simple and easy of application. For my part, however, I have not been able to obtain such encouragement. I have been using faradism for more than sixteen years in just such cases as Dr. Clarke has spoken of and, although I have sometimes thought improvement resulted, there was not such a decided benefit as to make me feel hopeful of very brilliant success. I say this of the faradic current when used exclusively. I have no doubt but that a judicious use of the faradic current may be of some benefit in many cases of leucorrhœa and simple metritis and ovaritis and neuralgia of the uterus and ovaries. Also in some cases of hysteria due to pain in the locality of the generative organs, it might have a moral if not a physical influence; but when the various disturbances of the female reproductive system are due to morbid tissue changes in those organs, I believe that faradism will have little if any influence on those morbid conditions. In such cases galvanism is going to do the most valuable service. We do not want to stimulate cell-growth, but rather retard or destroy such cell proliferation, and in the galvanic current we have an agent that will do that in the best manner, if it is used in a careful way. For all ordinary purposes, an apparatus consisting of 24 to 36 cells of McIntosh or Wait & Bartlett make will be sufficient to do the work of a general practitioner.

One of the greatest drawbacks to the use of galvanism to my mind, is the high cost of a good galvanometer to measure the current used. A reliable instrument costs so much that few general practitioners are willing to afford the outlay when they so seldom use it, and I believe if we are to use an agent so potent for good or evil, that the dose administered should be as accurately measured as strichnine or morphine. If we expect so get exact results from our practice, we ought to know exactly how those results are obtained in order to have them of practical value.

DR. F. L. BURT: There seems to be no doubt that all are not equally successful in their results from the use of electricity. The enthusiast, who thinks it the only agent of good, is no doubt over sanguine and probably reports too favorably. He who decries it, on the other hand, has doubtless not taken the trouble to investigate properly. I am not so enthusiastic as to use this agent to the utter exclusion and denial of everything else, but I do know that it is of value and I have frequently been gratified at my results. Failure is very frequently due to a lack of knowledge in the application on the part of the physician, and a very frequent cause of failure is due to the use of poor batteries. A good battery is a necessity. Many of those on the market are good toys, but are almost useless in the treatment of gynæcological cases. Two coils, coarse and fine wire, with a slow and a rapid vibrator, are necessary. I have used the faradic current with much satisfaction as an external application for its soothing effects, to ease pain, to stimulate muscles to contract, to test reactions in certain nervous affections, to increase peristaltic action, etc. In gynæcological cases it has been of great service in some cases of amenorrhœa, to cause more regular menstruation, to ease menstrual pains and to relieve general pelvic pain. In cases of relaxed tissues or prolapse of the pelvic organs, there is a slow but beneficial result. The method of application and kind of electrode used to have much to do with the success in any given case. The reader has said very little about the method of application, but although it is quite important perhaps the profession is sufficiently informed in respect to it.

In the early part of his paper the reader gave me the impression that he laid a great stress on faradism and little if any on galvinism. Faradism has been used more commonly in the past, and I think with better results, but this could only have been because there was less knowledge of the use of galvanism. This is not so to-day. Without speaking at all disparagingly of either variety, I think that no one, who has thoroughly tried both kinds, will hesitate for a moment to give the preference to galvanism as the most generally useful electrical current. There is no longer doubt of its value in treating fibroid tumors. In some cases the results are excellent, yet it is equally true that there are cases which cannot be benefited by its use, and surgery must

come in for a certain number of cases. The symptoms are usually relieved or cured, discharges are lessened or entirely stopped and hemorrhage is checked. Galvanism will stop hemorrhage which is due to the presence of a fibroid or other intra-uterine causes, but is of no use when due to pelvic troubles external to the uterus. There is a class of cases of fibroid associated with diseased tubes or displaced and adherent ovaries, which is not benefited by electricity. These need surgery. I reported a typical case of this kind in the *Boston Medical and Surgical Journal* of January 24, 1889. Inflammatory pelvic deposits are absorbed by the use of galvanism. On the other hand, a point of considerable importance which I have mentioned before, the cases, diagnosticated as pelvic cellulitis and which are frequently pyo-salpinx, are treated by galvanism and not benefited. This is due, according to my experience, to the fact of the presence of pus. In other words, pyo-salpinx or pelvic abscess is not relieved by galvinism, and this fact may aid in the diagnosis of the case. I have reported a typical case of each kind, for which see same reference as above. In the treatment of the disorders of menstruation and of diseases of the endometrium, I have thus far had decidedly beneficial results. Some cases in which there is more or less constant pain in the region of the ovaries in which the diagnosis varies, have been cured by the use of galvanism. There are also many conditions in which galvanism is useful, which I will not take your time to speak about, and still others which I am as yet investigating and hope to make a report in the future. Electricity, galvanism especially, should not be used by persons who are ignorant of it as a therapeutical agent, and the physician who is to employ it should be well versed in respect to its actions, and should know thoroughly the construction of the machine which he is about to employ.

Dr. W. S. Brown said that the cases detailed by the reader were very interesting, and of practical value. He believed that the primary faradic current exerted a remarkably soothing influence on excitable patients, under which they sometimes fell asleep during its administration. As he had several times related to this society, he was present when Dr. E. Cutter (now of New York) made his first attempt at electrolysis in Melrose, Mass. Dr. Kimball, of Lowell, also assisted, but, on account of the needles used being too slim, we did not succeed in penetrating the fibroid tumor. He was still in doubt whether the success in subsequent operations was due to electrolysis or to shock. Like all similar operations, it is not free from danger; and, in many respects, differs from Apostoli's.

Dr. A. P. Clarke: In closing the discussion the speaker said that he should offer only a few remarks. In the first place he would state that he did not wish to be understood as holding to the view that the faradic can be substituted for the galvanic current. It is true, he said, that he had referred to the achievements of Apostoli and his followers, but that treatment comprises chemical galvano-cauterization. In order to insure success when adopting Apostoli's method, instruments of peculiar construction must be employed, and their application must always be made under the strictest antiseptic precautions. For this reason he believed that method of treating certain morbid lesions would never be popular, but other methods would be resorted to to accomplish the same results. The cases that are benefited by faradism are often radically different from those that may be benefited by galvanism, the former can be treated with comfort and safety to the patient and with satisfaction to the physician. The report of the 37 cases as given in his paper, as well as of those that he had already published, the speaker remarked, attest in some measure the benefits that may be secured by faradism. Something has been said in regard to the employment of the faradic and the galvanic current in the same case; the moral effect of such treatment may occasionally be of benefit, but the nature of lesions requiring the use of the galvanic and faradic current often being so different, he very much doubted whether, in the majority of cases, any permanent improvement resulted by their admixture. The speaker made mention of the helpful effects of the faradic current with slow interruptions in cases of weakened and relaxed muscular tissue; he referred particularly to Case No. 3 in the paper, in which a cystocele induced by overdistension of the bladder was cured by prolonged applications of that current. For overcoming pain and nervous excitability, the faradic current with frequent interruption was employed. He also referred to the results mentioned in the discussion by Dr. Burt, that were obtained by a fine and by a coarse coil of wire in his battery. The distinguishing features of these respective currents are important considerations. By keeping this principle in view the operator will often be successful with his cases; by neglect, however, utter failure may result. Reference has been made to Dr. E. Cutter's method of electrolysis, though a consideration of that method of operating is hardly germane to the subject now before the Society, the speaker would venture to remark that he had been favored with an opportunity of seeing some of the earlier cases of fibroids treated by that distinguished operator. He believed that Dr. Cutter should have the honor of being the originator of the treatment of uterine fibroids by electrolysis, and that he is deserving of great credit for the good work he so early accomplished.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York Academy of Medicine—Dr. E. F. Brush read a Paper on the Relationship Existing between Human and Bovine Tuberculosis — Discussed by Dr. H. M. Biggs, Dr. Forrest, Dr. Grandin and Dr. Loomis—Signs of the Moribund Condition, by Dr. John Shrady, etc.

At a recent meeting of the Academy of Medicine Dr. E. F. Brush, who for some time past has been making a special study of this subject, read a paper on *The Relationship Existing between Human and Bovine Tuberculosis*, in which he advocated the doctrine that tuberculosis in man is derived directly from the bovine species, and claimed that if domestic cattle could be done away with, tuberculosis would in the course of a few years become extinct, since while it has been conclusively demonstrated that the disease can be transmitted by the cow to her offspring, there is no proof that such transmission ever takes place in the human subject.

Phthisis, he said, was not, as many supposed, the result of civilization, since barbarous and uncivilized races were afflicted by it as severely as many of the most advanced civilized peoples. Neither geographical position or climatic conditions were a factor in its distribution, although every part of the globe, with the exception of a few isolated areas, was a habitat of the disease. After several years of close study of the affection, including a consideration of all available statistics and the habits of the people where it prevails, he said he had arrived at the conclusion that the only constantly associated factor is found in the inbred bovine species. If a community was closely associated with inbred dairy cattle, tuberculosis prevailed there, and this position he believed susceptible of proof.

After referring successively to statistics relating to phthisis among the Hottentots of Africa and the Kirghises of the steppes of Russia, and in Denmark, Iceland, the island of St. Michael in the Atlantic Ocean, Greenland, South America, Australia, New Zealand, the Highlands of Scotland, North Wales, the Hebrides, Switzerland, Madagascar, Algiers and Greece, he stated that in studying the relations, as regards tuberculosis, between the human and bovine races, religion was found to play a considerable part. Thus, in India, with the Mohammedan, Brahmin and Buddhist religions, there was undoubtedly an absence of phthisis before the English occupation. Up to that time the only cow the inhabitants had was the small Hindu variety, not related to our dairy cow, and it was regarded as an object of veneration; while the milk used in the country was derived from the buffalo. All the Buddhists and many of the Brahmin castes abstained from the use of meat in any form. There was, however, a constant change taking place in a country like India. Prejudices were gradually dying out, and many of the people had undoubtedly adopted the habits of their conquerors. The English dairy cow was slowly but surely finding her way into India; though the Buddhists and Brahmins would, of course, be the last to accept the cow as a food producer.

In considering the statistics of Europe he said it would be found that the prevalence of phthisis is regulated by the ratio of the bovine to the human race. Thus, in Ireland, where the cattle about equaled the human population in number, and in Denmark, with about the same ratio of cattle to inhabitants, the disease was about equally prevalent. In Portugal, where there are six inhabitants to one bovine animal, phthisis attracted so little attention that but few notices relating to the disease in that country could be found. Comparative immunity from the disease, corresponding with the small number of cattle, was also met with in many parts of Italy and Egypt. From the statistics that he produced Dr. Brush thought there could be little doubt that the inbred species of the bovine race is the prime etiological factor of tuberculosis in the human race. They not only fostered the germ and prevented its extinction, but sowed it in the human race, continually and abundantly. Without their aid the germ would perish, for of all germs known, none had so hard a struggle for existence in man as the bacillus of tubercle; as was shown by the fact that out of the immense number of individuals who were exposed to its infection, so comparatively few contracted the disease. After diligent search he had failed to find a single well authenticated case on record of a human fœtus at term showing evidence of tuberculosis; and the cow was the only known animal that thus transmitted tuberculosis to her offspring.

In concluding his paper Dr. Brush said: Man cannot generate new forms, but he can so control and interfere with nature's processes as to modify the original design. Inbred cattle are selected, sheltered and pampered, so that they would be unable to withstand the rigorous conditions of the wild state. They propagate earlier, are larger milkers, and are more efficient beef-producers, while their meat is more delicate and tender than that of the wild animal. All this is achieved by man at the expense of his own health.

In the discussion of the paper Dr. H. M. Biggs, of the Carnegie Laboratory, said that he could not but dissent very strongly from the conclusions reached by Dr. Brush. It was well known how unreliable statistics were. He believed that the statistics given in the paper were not strictly true; but even if they were true, he did not think they would prove the correctness of Dr. Brush's posi-

tion, for the reason that they left out of consideration all the other factors concerned in the production of tuberculosis. Having criticised some of the statements made in the paper in regard to the prevalence of phthisis in some of the countries and places mentioned, he stated that in Chili the disease had of late years become very common, although there had been no marked increase in the number of inbred cattle to account for this. Again, in the Sandwich Islands the population was dying off from phthisis; but this was not because of the presence of inbred cattle, but was due to the spread of the infection by white settlers. The same was true of the American Indians. They did not possess many inbred cattle; yet phthisis was very fatal among them.

Dr. Brush, he said, had left entirely out of account the influence of age, altitude and occupation, which had been shown to be very important etiological factors. If tuberculosis was often conveyed by means of milk the disease ought to be much more common among young children, who lived almost entirely upon this food, than among any other class of individuals; while as a matter of fact it was quite rare among this class. The facts appeared to show that phthisis is most prevalent among the highly civilized nations and among the native populations of uncivilized countries, which are brought into more or less constant contact with foreigners from civilized countries. It seemed to him that Dr. Brush had started out with the preconceived idea that phthisis is derived from the bovine species, and had endeavored to make all the facts he met with in connection with the disease subservient to this preconceived notion. The only observations which carried out this idea were based on statistics which, as he had said, he believed to be unreliable, and which would only be of value if they were collected with the greatest possible care, and with all the other conditions affecting the production of phthisis also taken into consideration.

In all civilized countries there are to be met with these other elements (and particularly that of occupation), which enter into the causation of the disease. Confinement in close, ill-ventilated apartments had a most pronounced effect upon males and females alike. More than this, the theory propounded in the paper was entirely inadequate to account for the marked prevalence of phthisis among armies and the inmates of prisons. Again, other things being equal, the disease was found to prevail in proportion to the density of the population.

We could not but regard Dr. Brush's conclusions as unfortunate, especially if they should be accepted, since they would have the effect of diverting attention from the most important mode of origin of phthisis, viz: transmission from the human subject. If the disease were derived from animals it could only be through the avenue of the alimentary canal; and it was a well-established fact that the number of cases in which the infection enters the system through the alimentary canal is exceedingly small. In the case of animals fed on tuberculous matter the resulting tuberculous disease, when such occurred, was found to be located in the alimentary canal, not the lungs; and there was every reason to believe that the same would be true in the case of the human subject. In tuberculous animals, moreover, the milk was not infected with the bacillus unless the mammary glands are implicated in the tuberculous disease.

It seemed to him ill-advised to look for the cause of the trouble in this unlikely source (from animals), when there were so many ready ways by which the human system might become infected with tuberculosis. One of the most prominent of these was undoubtedly the sputum of tuberculous patients. The sputa of all such individuals abounded in tubercle bacilli, and when it was remembered how large was the quantity of the expectoration of consumptives and for how long a time the disease often lasted, it could well be appreciated what a source of danger to others this constituted. The sputum was apt to be scattered all around, and on its becoming dry the bacilli it contained often floated about with the dust in the air. The bacillus was the universally recognized special cause of tuberculosis, and it might thus be seen how readily it could be inhaled in this way, and so brought into direct contact with the lungs, which are the ordinary seat of the disease. Although he felt convinced that a much larger number of cases of phthisis really originated from animals than was generally supposed, this class, there was every reason to suppose, constituted but a small number of all the causes of the disease.

Dr. Forrest said that in certain sections of the Southern States with which he was familiar phthisis was almost wholly unknown among the whites, but was quite common among the blacks. Yet far more fresh beef and milk were consumed by the white population than by the negroes, who lived principally upon corn and pork. It was also a fact that a very fine stock of cattle was now raised in these same districts. He could not see how, therefore, this condition of affairs could be reconciled with the theory of Dr. Brush.

Dr. Grandin said that a little more than a year ago Dr. M. D. Blain had stated in a paper read before the Section of Public Health of the Academy that 2 per cent. of all cattle killed in the New York abattoirs and 21 per cent. of all the milch cows in the country were affected with tuberculosis.

The President, Dr. Loomis, said it seemed to him that the position taken by Dr. Brush was too narrow a one, and that any one who assumed that phthisis is due to one cause alone was beg-

ging the question. It was a disease that had many causes, and the bacillus which constituted its special etiological agent would not give rise to it unless it met with conditions which favored its development. Among the conditions to be taken into consideration were climate, hygienic surroundings, heredity and soil, and a long list of causes must be in operation before the bacillus was able to do its specific work.

In closing the discussion Dr. Brush said he thought that his position had been somewhat misunderstood. He did not wish to imply that the disease was derived alone from the cow. All that he pretended to claim was, that wherever inbred cattle existed, there we found phthisis also. It needed no proof to show that but a small proportion of individuals who were exposed to the infection contracted the disease, since, although the number of deaths from phthisis was certainly very great, it would be infinitely larger than it is if this were the case. In addition to the bacillus, there must be present the conditions favorable to its development, as Dr. Loomis had stated.

But, at the same time, he believed that the disease was originally derived from the bovine species. He did not believe that less that 50 per cent. of all dairy cattle were affected with it, while the statistics which he had quoted showed that wherever there was a race of people without cattle phthisis was unknown. He believed, furthermore, that if all the cattle in this country were to be killed the disease would finally die out entirely here. In countries where dairy cattle were introduced for the first time it took a series of years for the disease to become established among the population, as was the case in Thibet and Ceylon; and, in the same way, if all the cattle were removed from a country phthisis would also disappear in the course of some years. Even after the disease had become firmly established, he did not believe that it could maintain its existence indefinitely after the removal of all cattle. He did not wish to rely on statistics except so far as they substantiated the main point that he made, that wherever cattle existed there phthisis also existed. As to the mortality among prisoners, etc., he was quite willing to acknowledge that the infection was derived from persons affected with the disease, and that the existing conditions were peculiarly favorable to the development of the disease. The practical outcome of the whole matter, to which he desired to call special attention, was that the prevalence of phthisis could undoubtedly be diminished by properly regulating by law the breeding of cattle, so that the in-breeding now so common might be done away with.

At the last meeting of the New York County Medical Association Dr. John Shrady read a paper on *Signs of the Moribund Condition*, in which he brought out a number of interesting points. He laid considerable stress upon prognosis, as being a much neglected study, even though to the patient it was of paramount importance, as involving many questions of individual, legal and social importance. The dying state, he said, could never be arrested. Once begun, it could end only in one way. His conclusions were that, in general, the most trustworthy signs of death are those that appeal to the eye; that among these the respiratory function holds the first rank, both in cases of coma and asthenia, and especially where the two modes of death are combined; that the death by coma has a more extended period of duration; that the most valuable sign of inevitable dissolution is the up-and-down movement of the *pomum Adami;* that temperature changes deserve attention, particularly when the curves are sharp, high and continuous; that intermittent pulse is an early sign of death, particularly when not due to any disturbed action of the nervous system; and that deaths from syncope are too sudden to admit of much observation or study.

P. B. P.

The Causation of Pneumonia.

Dear Sir:—This is an attempt to summarize certain evidence presented in the valuable "Introduction to the Study of Pneumonic Fever" by Edward F. Wells, M.D., being published in THE JOURNAL, and to group that evidence relative to epidemics by seasons of the year with evidence relating to the increase and decrease, by seasons of the year, of pneumonia other than epidemic.

On pages 259–262 of THE JOURNAL for Feb. 23, 1889, Dr. Wells gives a table of chronology of epidemics of pneumonia, stating the country, the year, and the season of the year, in which each epidemic occurred. I have footed his column relative to the season of the year, and find the result as stated in my Table I as follows:

TABLE I.—The reported epidemics of pneumonia in the Northern Hemisphere during the 448 years, 1440–1888, reported by seasons, and estimated by months. (From data in a table on pages 259–60, THE JOURNAL, Feb. 23, 1889.)

Winter.			Spring.			Summer.			Fall.		
Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.
13	25	51	57	27	12	3	1	0	1	3	5
Total 89.			Total 96.			Total 4.			Total 9.		

The study of the subject by quarters of the year is not as satisfactory as by months, and especially as I wish to compare the result with my previous studies of sickness from pneumonia by months; therefore I endeavor to learn the probable grouping of epidemics by months.

In Table I, I find that the least number of

epidemics (4) occurred in the summer, and that the greatest number (96) occurred in the Spring. The quarter in which occurred the next to the least number was the fall, therefore the *month* of least epidemics must have been in the summer quarter, but nearer the fall than the spring, it must have been, then, in August. The month of maximum epidemics must have been in the spring, but nearer to the winter than to the summer quarter, therefore in March. Given the months of maximum and minimum epidemics, and dividing the epidemics actually reported in each quarter among the several months so that the month in each quarter to which the largest number is assigned shall be next to the quarter in which the larger number is reported, the probable numbers by months are as stated in the upper line of figures in Table I.

TABLE 2.—The average per cent. of weekly reports stating presence of sickness from pneumonia in Michigan and average atmospheric temperature, by months, during the eight years, 1877-84. Also, of the reported epidemics of pneumonia in the Northern Hemisphere during the years 1440-1888, the numbers by months. (The data for the reported epidemics of pneumonia is from THE JOURNAL, Feb. 23, 1889, pages 259-60. The data relative to sickness from pneumonia and average temperature are from the Annual Report of the Michigan State Board of Health for 1885, pages 26 and 128.)

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Sickness from Pneumonia in Michigan.	62	66	62	56	42	27	17	14	18	23	36	48
Average Temperature in Michigan.	21.43	25.60	31.04	44.48	56.60	65.54	70.68	68.85	62.05	51.34	35.99	27.25
The reported Epidemics of Pneumonia.	25	51	57	27	12	3	1	0	1	3	5	13

TABLE 3.—The average cases of sickness from "Respiratory Disease" per 10,000 of the native troops in India, and the average atmospheric temperature, by months, during the three years, 1883-85. Also, of the reported epidemics of pneumonia in the Northern Hemisphere during the years 1440-1888, the numbers by months. The figures for the reported epidemics of pneumonia are from data in a table in THE JOURNAL, Feb. 23, 1889, pages 259-60. The figures for sickness from "Respiratory Disease" and for average atmospheric temperature are from data in the 20th, 21st and 22d Annual Reports of the Sanitary Commissioner with the Government in India.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Sickness from "Respiratory Disease" in India	102.8	71.6	51.8	38.6	33.8	26.6	25.5	23.7	31.8	37.7	59.9	93.8
Average temperature in India	68.7	70.6	79.1	83.9	85.2	84.8	83.3	82.7	82.3	80.5	74.2	69.1
The reported epidemics of pneumonia.	25	51	57	27	12	3	1	0	1	3	5	13

Having, now, the epidemics by months, it is possible to compare them by months with the atmospheric temperature, and with the sickness from pneumonia as recorded in Michigan for many years. This is made possible by Table 2

The epidemics all seem to have been in the Northern hemisphere, but many of them in climates much warmer than that of Michigan. Inasmuch as it is impracticable to learn just what the average corresponding atmospheric temperature was, it seems best to study the relation of the epidemics to the actual temperature not only in a cold climate, like that of Michigan, but also in a warm climate like that of India. Accordingly the relation in the warm climate is shown in my Table III.

The study of such relations as this of sickness to atmospheric temperature by means of Tables, is complicated because the changes in the sickness may not all be coincident with the temperature changes, but may lay behind them. For this, and other reasons the most satisfactory method of studying such subjects is by means of diagrams, accurately drawn to scale, so that the relations between supposed cause and effect in any one month and of cause or effect in each and every month of the year may be seen at a glance.

Dr. Wells says: "There can be no doubt as to pneumonic fever epidemic as well as sporadic—everywhere and always being due to the action of a single peculiar and specific morbific material."[1] Without attempting to affirm or deny this, I respectfully submit that the evidence which he has supplied in his Table of Epidemics, taken with the evidence heretofore collected by myself,[2] seems to prove that pneumonia—"epidemic as well as sporadic—every-where and always" is absolutely controlled by the atmospheric temperature, or by conditions associated therewith.

HENRY B. BAKER.

Lansing, Mich., March 18, 1889.

Intubation of the Larynx.

Dear Sir:—An editorial appears in the April 13th issue of your valuable journal, on intubation of the larynx, that conveys an impression that, I hope, was not intended. The impression conveyed is, that intubation being a bloodless operation, is readily consented to, and is performed early and often unnecessarily. Such an impression also prevails extensively among the profession, and it is often said, "Oh! well! all those cases would get well any way." Such statements are peculiarly aggravating when we

[1] THE JOURNAL, Feb. 23, 1889, p. 263.

[2] Published in article entitled "The Causation of Pneumonia" in Annual Report, Michigan State Board of Health for 1886, pp. 246-324 and in other articles on allied topics, in the past few years.

remember how many times we are called to perform intubation because the patients are too far gone for tracheotomy, too young, or because the cases are of a too malignant nature to sanction a cutting operation. It must be remembered that nine-tenths of all these cases are in consultation with other doctors, and we are called only as a last resort when all other measures have failed, and when it is evident that death must soon ensue. Many of these cases are moribund, unconscious and well nigh hopeless, others are young, and others again of a malignant nature, so that the favorable cases are few and far between; and yet it is said that the operation is performed early. Such a statement is a reflection not only upon the operator but upon the attending physicians as well.

To illustrate the condition of many of these patients, allow me to mention a few cases.

November 27.—I was called by Dr. O'Malley to see a little girl of 7 years suffering from semi-malignant diphtheria; nasal, pharyngeal and laryngeal. The parents at first objected to the operation, and emetics were repeatedly given in addition to other medication; these failing to give relief, and it being perfectly evident to the parents that the child was surely strangling, consent was given. The doctor acknowledged that the case was too unfavorable for tracheotomy. The child wore the tube four days and recovered completely.

November 30.—I was called by Drs. Steele and Jacques to perform the operation upon a baby 18 months old, "too young for tracheotomy." *Patient recovered.*

December 3.—I was called by Dr. G. W. Webster to operate upon a little girl 4 years old, with semi-malignant diphtheria with invasion of the larynx. The patient was surely dying and "too unfavorable for tracheotomy." The child wore the tube five days and recovered.

January 1.—I was called by Dr. Jacques. Patient 8 years old, moribund, unconscious, limp, and pulseless at the wrist. The tube was introduced without resistance and artificial respiration performed. The patient revived and fully recovered. The doctor stated the child would have been dead in ten minutes.

January 5.—Through the courtesy of Dr. A. L. Thomas, I was called to operate upon a baby 18 months old and moribund, "too young and too unfavorable for tracheotomy." Patient revived, returned to consciousness, but died two days later.

January 10.—Through the courtesy of Dr. Parsons, operated upon a baby 17 months old; moribund at the time of operating. Patient died twelve hours later.

January 18.—Through the courtesy of Dr. Miller, operated upon a baby fifteen months old, "too young for tracheotomy." Patient recovered.

March 12.—I was called by Dr. Kippax to operate upon a boy 7 years old, Drs. Guerin and Jacques being present. The patient was unconscious, comatose and actually dying, but revived and fully recovered.

March 14.—Through the courtesy of Dr. Simons operated upon a patient 5 years old, with malignant diphtheria of the nasal cavities, pharynx and larynx. Patient died from asthenia.

April 8.—Through the courtesy of Drs. Gatchell and Mitchel operated upon a little girl 8 years old, suffering from malignant diphtheria with invasion of the larynx. The patient was moribund, extremities cold, and clammy and pulseless. The patient fully revived, but died the next day from the malignancy of the disease.

April 24.—I was called to see a boy 4 years old a patient of Dr. Marks' who was present at the operation. The boy was upon the point of death from diphtheritic laryngeal stenosis. The child was unconscious, the lips were of a dark purple, almost black, the pulse could not be detected at the wrist, and the child was certainly dying. When the patient had reached this deplorable condition I was hastily summoned, and found the attendants hovering over the child waiting for the last gasp to prove that life was extinct. The operation was performed and artificial respiration resorted to before consciousness was restored. The child fully revived, but died as a result of the hypostatic congestion of the lungs. These are only a few cases among *many* of like nature, but a sufficient number to prove, I hope, that the operation is not performed early or unnecessarily. Yours respectfully,

F. E. WAXHAM, M.D.

240 Wabash Avenue.

Climatic Influence in Phthisis.

Dear Sir:—In a recent editorial (page 523) THE JOURNAL called attention to the importance of "knowledge concerning the elements that give special character to climate and their influence on the functions of the human body" . . . . knowledge "essential" . . . . to "every practitioner, who would do justice to those who depend upon him for advice." And yet, as indicated in the editorial, the records of *facts* necessary to give us such knowledge are not usually to be had; we usually obtain only the *opinions* of those who write on this subject, based upon experience which may be valuable, but which opinions, after all, do not greatly advance the science of climatological etiology. It was to supply such records of facts, the absence of which was deplored in the editorial just referred to and in the article by Dr. Denison mentioned therein, that the paper which followed Dr. Denison's at the International Medical Congress, was prepared and

read; I refer to the article entitled, "Relations of Certain Meteorological Conditions to Diseases of the Lungs and Air-passages as shown by Statistical and other evidence." The statistics included tens of thousands of weekly reports of sickness, and records of hundreds of thousands of deaths from phthisis and from disease of the air-passages, in this country and in other countries. These statistics were studied in connection with statistics of the meteorological conditions, and were found to be harmonious; and the writer considered it proved "that the rise and fall of [phthisis and] the diseases of the air-passages are controlled by the atmospheric temperature, and that this is accomplished mainly through the quantity of vapor of water abstracted from the air passages." In the discussion which followed these papers, the writer expressed the opinion that this was a general law,—that if there could be obtained records of phthisis and meteorological conditions in Colorado their relations would be found to be the same as has been found to be true elsewhere, wherever the subject has been studied. If any one doubts this generalization, what is needed is that the facts be recorded, in each locality respecting which there may be doubt, and that these records of facts be brought forward, that they may be studied by those of us who are interested in the subject. I wish most emphatically to indorse the plea in the article by Dr. Denison and in the editorial, for the bringing forward of *facts*, accurately stated by weight, measure or number so that they may be available for building up the science of tiology or of climatological therapeutics.

By this mail I send you a copy of the paper containing the mortuary, morbility and meteorological statistics which I have mentioned.

Very respectfully, HENRY B. BAKER.

Lansing, Mich., April 19, 1889.

BOOK REVIEWS.

ELECTRICITY IN THE DISEASES OF WOMEN, with Special Reference to the Application of Strong Currents. By G. BETTON MASSEY, M.D., Physician to the Nervous Department of Howard Hospital; late Electro-Therapeutist to the Philadelphia Orthopædic Hospital and Infirmary for Nervous Diseases, etc. 8vo, pp. viii, 210. Philadelphia and London: 1889.

Taken as a whole the work done by Dr. Massey in his "Electricity in the Diseases of Women," is very satisfactory, and helps to fill a deeply-felt need of the practitioner, viz: a modern scientific work on electricity. The rapid development and recent scientific demonstrations of this subject have rendered former authorities almost absolute, and as yet comparatively nothing has arisen to take their place.

While Dr. Massey's book covers but a limited portion of this vast subject, it still is in most respects, scientific and will prove of assistance to the practitioner who is desirous of employing electricity as a therapeutic agent.

But little space is occupied by the consideration of the physics of electricity proper, but the detailed experiments given in chapters III and IV are well conceived, and will do much toward clearing up this intricate subject to the minds of the uninitiated, and they should be thoroughly mastered by the practitioner who is ambitious to employ electricity intelligently. The remainder of the book is mainly a compilation from articles which have appeared from time to time in various medical journals during the past three years, and in most respects lacks originality save in the detail of cases.

Many of the more ordinary difficulties met with by the gynæcologist, such as menorrhagia, sub-involution, hyperplasia, pelvic induration, pelvic pain—including obstructive and nervous dysmenorrhœa—uterine stenosis, intermenstrual neuralgia, uterine displacements, amenorrhea and hydrosalpinx, all are treated by the electrical means indicated, and with results which coincide with those reported by the majority of operators employing similar methods.

By far the greater portion of the book is devoted to a description of Apostoli's work. In chapter V. is considered the intra-uterine galvano-chemical cauterization (Apostoli's operation), as employed in the treatment of fibroid tumors and chronic metritis. The different steps of the operation are clearly described, and the electrodes and appliances illustrated. It is to be regretted in this connection that the author recognizes no form of intra-uterine flexible electrodes other than the stiff platinum sound, because in consequence a greater proportion of cases of filroid tumors with tortuous canals must submit to the more dangerous operation of galvano-puncture. This subject naturally forms the most important portion of the book, and is worthy the time devoted to it.

A chapter is devoted to the consideration of Extra-Uterine Pregnancy, electrically treated, and one to "Contra-indications and Limitation to the use of Strong Currents."

To the conservative practitioner this book offers a safe and effectual method of treatment for many difficulties which have in the past been a serious perplexity to him, while to the unscrupulous operator it should come as a grave reproach for the severe measures so often unnecessarily and unjustifiably employed, and it is to be hoped that through its influence some little may be accomplished toward righting this great wrong.

F. H. M.

MISCELLANY.

ILLINOIS STATE MEDICAL SOCIETY MEETING at Jacksonville, May 21, 1889. The following action was taken by the Society at the last meeting:

WHEREAS, It has been demonstrated by the experience of the past years that the present constitution, by-laws and rules of the Illinois State Medical Society have become totally inadequate to a proper and satisfactory carrying out of the aims and purposes for which said constitution, by-laws and rules were formulated; be it

Resolved, That a committee of five members be appointed, whose duty it shall be to secure from the Secretary of State a charter for this Society under the law providing for the incorporation of organizations, not for pecuniary profit.

Resolved, That this committee be empowered and is hereby authorized to draw up a new constitution and new by-laws for the future government of this Society.

Resolved, That said committee be required to mail every member of this Society a printed copy of the proposed constitution and by-laws at least sixty days prior to the next annual meeting, in 1889.

Resolved, That the consideration, amendment and adoption of the proposed constitution be the special order at its next meeting, immediately following, as nearly as possible, the delivery of the President's address.

It is specially important that there be a full attendance at the meeting this year, not only of the permanent members of the Society, but of representatives from all local societies of all parts of the State, as many important questions will come up affecting the future of the Society and its influence on the medical interests of the whole State.

Those expecting to present volunteer papers should notify the Committee of Arrangements as early as possible.

The Committee of Arrangements has secured reduction of railroad fare for members and delegates, on the certificate plan. Each delegate should get certificate from his local agent, of having paid full fare to the meeting.

The Constitution of the Society requires all members and delegates to register and present their credentials before participating in any business of the meeting. Registration will begin at 9 o'clock, A.M., on Tuesday, at the Hall. It is desired that as many as can do so, will register before the Society is called to order.

BARIUM sells for $975 a pound, when it is sold at all, and calcium is worth $1,800 a pound. Cerium is a shade higher—its cost is $160 an ounce or $1,920 a pound.

HEALTH IN MICHIGAN, APRIL, 1889.—For the month of April, 1889, compared with the preceding month the reports indicate that intermittent fever, rheumatism and remittent fever increased, and that influenza, pleuritis and pneumonia decreased in prevalence.

Compared with the preceding month, the temperature in the month of April, 1889, was higher, the relative humidity was less, the absolute humidity and the day and the night ozone were more.

Compared with the average for the month of April in the three years, 1886–88, measles and inflammation of kidney were less prevalent in April, 1889.

For the month of April, 1889, compared with the average of corresponding months in the three years 1886–'88, the temperature, the absolute humidity, the relative humidity, the day ozone and the night ozone were about the same.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of April, 1889, at 23 places, scarlet fever at 43 places, typhoid fever at 5 places, measles at 14 places, and small-pox at 1 place.

Reports from all sources show diphtheria reported at 6 places less, scarlet fever at 11 places more, typhoid fever at 3 places less, measles at 2 places more, and small-pox at 4 places less in the month of April, 1889, than in the preceding month.

LETTERS RECEIVED.

Dr. Perry H. Millard, St. Paul, Minn.; H. Weitz, Montpelier, O.; Dr. Osada Kotaro, Osaka, Japan; Dr. C. R. Reed, Middleport, O.; Pennsylvania Vaccine Co., Chambersburg, Pa.; Dauchy & Co., New York; Dr. C. H. Franklin, Union Springs, Ala.; Dr. R. W. Thrift, Lima, O.; Dr. E. G. Cochran, Jimulco, Mexico; Dr. O. C. Shirley, Pink Hill, Mo.; Dr. G. E. Brown, Las Animas, Col.; Dr. F. P. Becton, Sulphur Springs, Tex.; J. H. Fullbright, D. B. Harvey, W. Hall, D. H. Busk, Louisville, Ky.; D. E. Shane, Lawrence, Kan.; Dr. W. N. Yates, Cincinnati, Ark.; Dr. W. M. Moore, Ben Franklin, Tex.; Canton Surgical & Dental Chair Co., Canton, O.; Dr. J. J. Bland, Howma, La., Dr. B. Erp-Brockhausen, Lansing, Ia.; Geo. F. Lasher, Philadelphia; H. G. Fairbanks, Halifax, N. S.; Eisner & Mendelson Co., Fairchild Bros. & Foster, New York; Ed. P. Stevens, Boston; Dr. Boyd Cornick, Mascoutah, Ill.; Lutz & Movius, New York; Z. Orto, Pine Pluff, Ark.; Dr. P. H. Brooke, Lima, O.; Dr. A. C. Ames, Hebron, Neb.; Dr. G. L. Magruder, Washington.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 4, 1889, to May 10, 1889.

Based on surgeon's certificate of his disability, leave of absence for one month, with permission to leave the limits of the Department, is granted Surgeon W. H. Forwood, Medical Dept., Ft. Snelling, Minn. Par. 1, S. O. 35, Hdqrs. Dept. of Dakota, St. Paul, Minn., April 8, 1889.

Asst. Surgeon Valery Havard, relieved from duty at Ft. A. Lincoln, Dak., and ordered to Ft. Buford, Dak.

Asst. Surgeon L. W. Crampton, relieved from Ft. Bridger, Wyo., and ordered to Ft. Lyon, Cal.

Asst. Surgeon W. G. Spencer, relieved from Ft. Yates, Dak., and ordered to Ft. Bridger, Wyo.

Asst. Surgeon R. L. Robertson, relieved from Ft. Buford, Dak., and ordered to Ft. A. Lincoln. Par. 29, S. O. 95, A. G. O., April 24, 1889.

Capt. William C. Borden, Asst. Surgeon U. S. Army, relieved from duty at Ft. Ringgold, Texas, and ordered to report to the commanding officer at San Antonio, Texas, for duty at that post. Par. 7, S. O. 100, A. G. O., May 1, 1889.

STATE MEDICAL ASSOCIATION MEETINGS IN 1889.

STATE.	SECRETARY'S NAME AND ADDRESS.	TIME AND PLACE.
Arkansas.	L. P. Gibson, Little Rock.	Pine Bluff, May 28.
Colorado.	H. W. McLauthlin, Denver.	Denver, June 18.
Connecticut.	N. E. Wordin, Bridgeport.	Hartford, May 22.
Dakota.	H. E. McNutt, Aberdeen.	Mitchell, June 20.
Delaware.	J. E. Ellegood, Laurel.	Dover, June 11.
Illinois.	D. W. Graham, Chicago.	Jacksonville, May 21.
Indiana.	E. S. Elder, Indianapolis.	Indianapolis, May 21.
Iowa.	S. S. Lytle, Iowa City.	Keokuk, May 15.
Maine.	C. D. Smith, Portland.	Portland, June 11.
Massachusetts.	F. W. Goss, Boston.	Boston, June 11.
Minnesota.	C. B. Wetherle, St. Paul.	Minneapolis, June 20.
Missouri.	J. C. Mulhall, St. Louis.	Springfield, May 21.
Nebraska.	A. S. v. Mansfelde, Ashland.	Kearney, May 21.
N. Hampshire.	G. P. Conn, Concord.	Concord, June 18.
New Jersey.	Wm. Pierson, Orange.	Spring Lake, June 4.
New York.	E. D. Ferguson, Troy.	New York, Sept. 25.
Ohio.	G. A. Collamore, Toledo.	Youngstown, May 22.
Oregon.	C. C. Strong, Portland.	Portland, June 11.
Pennsylvania.	W. B. Atkinson, Philadelphia.	Pittsburgh, June 4.
Rhode Island.	G. D. Hershey, Providence.	Providence, June 13.
Tennessee.	D. E. Nelson, Chattanooga.	Nashville, June 19.
Vermont.	D. C. Hawley, Burlington.	Brattleboro, June 27. Burlington, Oct. 10.
Virginia.	L. B. Edwards, Richmond.	Roanoke, Aug. or Sept.
West Virginia.	J. L. Fullerton, Charlestown.	W. Sulphur Springs.